

# STATE OF ALASKA

## DEPARTMENT OF NATURAL RESOURCES OFFICE OF THE COMMISSIONER

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November 4, 2011

RE: State Pipeline Coordinator's Office Annual Report - Fiscal Year 2011

Dear Reader,

The SPCO is pleased to enclose a copy of the SPCO Annual Report for fiscal year 2011.

Safe and reliable energy is essential to our quality of life and economic stability. Since the construction of the Trans-Alaska Pipeline System in the late 1970s, Alaska has been a key contributor to the nation's energy security. Once again, Alaska's natural resources are becoming a topic of discussion across the nation.

In December, the state will hold one of the largest oil and gas lease sales in the country this year, encompassing nearly 15 million acres in the Beaufort Sea, North Slope and North Slope Foothills. In addition, the Bureau of Land Management will hold its NPR-A lease the same day, offering about 3.06 million acres. Excitement is building over new developments on existing leases in the North Slope area and Cook Inlet, and multiple large-scale pipeline projects are being proposed to ship Alaska's immense natural gas reserves to market. New and existing pipelines regulated by the State Pipeline Coordinator's Office (SPCO) will play a critical role in the future of oil and gas development in Alaska.

The State of Alaska's policy is that development, use, and control of a pipeline transportation system make the maximum contribution to the development of the human resources of this state, increase the standard of living for all its residents, advance existing and potential sectors of its economy, strengthen free competition in its private enterprise system and carefully protect its incomparable natural environment. The SPCO is responsible for the 18 jurisdictional pipeline right-of-way leases issued under Alaska Statute 38.35, the Alaska Right-of-Way Leasing Act, and one right-of-way grant issued under Alaska Statute 38.05, the Alaska Land Act.

The attached report provides general information for each jurisdictional pipeline, highlights lessee reported activities, summarizes specific state oversight activities for construction, operation, and maintenance, then provides some thoughts on the outlook for the next fiscal year, including updates on several proposed natural gas pipeline projects. An electronic version of the SPCO Annual Report is available at <http://dnr.alaska.gov/commis/pcso>.

The SPCO annual report is an evolving document, which strives to provide the reader with an effective summary of pipeline activities during the preceding fiscal year. You are welcome to contact the State Pipeline Coordinator's Office at (907) 269-6859 with any comments or questions.

Sincerely,



Daniel S. Sullivan  
Commissioner

Errata Sheet for  
State Pipeline Coordinator's Office 2011 Annual Report  
Last Update: January 18, 2012

<b>Location</b>	<b>Description of Correction</b>
Page 57 & Table of Contents	Changed "Exploration" to "Transportation"
Page 57, paragraph 1	Changed "Badami pipelines" to "Badami Sales Oil Pipeline"
Page 58, paragraphs 1 & 4	Changed language to reflect Badami Utility restart in Aug. 2010
Page 59, paragraph 2	Revised first sentence to read: "The SPCO observed pipe subsidence in the area surrounding the west Shaviovik crossing."
Page 59, paragraph 3	Deleted first sentence; added the following sentence at the end of the paragraph: "The ILI data indicate that the depression does not affect the pipeline integrity."
Page 62, paragraph 1	Annual inspection occurred on May 3, 2011
Page 64, paragraph 3 & caption	Corrected mislabeling of two pipelines settled on Endicott Pipeline
Page 66, paragraph 3	Changed "BPXA" to "BPTA"
Page 70, paragraph 3	Added sentence to end of paragraph: "BP took immediate action to address the matter in accordance with its corporate policies."
Page 108, paragraph 1	Changed language to reflect Badami Utility restart in Aug. 2010
Page 108, paragraph 3	Deleted sentence "BPXA hires Det Norkse Veritas... of the QAP" and inserted actual QAP submission and approval dates.
Page 108, paragraph 4	Revised last sentence to read "BPXA meets the USDOT inspection requirement of intervals not exceeding three weeks, but at least 26 times each calendar year."
Page 109, paragraph 3	Corrected mislabeling of two pipelines settled on Endicott Pipeline
Page 111, paragraph 2	Changed "BPXA" to "BPTA"
Page 113, paragraphs 1 & 4	Changed "inspections" to "mitigation" and "external" to "internal"
Page 114, first & last paragraph	Changed "isolation" to "insulation" and "pipelines" to "facilities"
Page 119, paragraph 6	Corrected language in USDOT warning letter description and added "The issues were resolved with USDOT/PHMSA."
Table 8	Changed column 6, row 5 to "27"; columns 5 & 6, row 6 to "194"
Table 9	Replaced question marks in table with "No"
Table 9 & 10	Corrected mislabeling of tables 9 & 10
Table 11	Changed column 5, row 7 to "0"
Table 12	Added additional comments to Badami Oil, Endicott Oil and Northstar Oil in the "Changes Noted/Comments" column
Table 14 & Table of Contents	Deleted Table 14 due to the difficulty of clearly communicating in table format the requirements that apply to each pipeline and BP's related activities.



STATE  
PIPELINE  
COORDINATOR'S  
OFFICE



**STATE OF ALASKA**  
*Sean Parnell, Governor*



**DEPARTMENT OF NATURAL RESOURCES**  
*Daniel S. Sullivan, Commissioner*

**STATE PIPELINE COORDINATOR'S OFFICE**  
*Frederick M. Thompson, State Pipeline Coordinator*

The State Pipeline Coordinator's Office Annual Report is available online at  
<http://dnr.alaska.gov/commis/pco>.



Copies may be requested from:

**State Pipeline Coordinator's Office**  
411 West Fourth Avenue, Suite 2C  
Anchorage, Alaska 99501

**Front Cover:** *In 2011, North Fork Pipeline began shipping Cook Inlet natural gas and brought a new source of energy to Southcentral Alaska. Fiberspar LinePipe® is a composite pipe consisting of an inner thermoplastic pressure barrier reinforced by high-strength glass fibers embedded in an epoxy matrix. North Fork Pipeline is the first common carrier line in Alaska to be constructed out of a composite pipe material.*

Photo credit: Ben Hagedorn Cover design: Graham Smith

# Contents

## **INTRODUCTION . . . . . 1**

State Pipeline Coordinator’s Office . . . . .	1
Jurisdictional Pipelines . . . . .	11
SPCO Liaisons . . . . .	12
Joint Pipeline Office . . . . .	15

## **TRANS-ALASKA PIPELINE SYSTEM**

Background Information . . . . .	17
PS1 Leak and Cold Restart Incident . . . . .	19
2011 Oversight Activities . . . . .	28

## **NORTH SLOPE PIPELINES . . . . . 56**

<b>BP Transportation (Alaska) Inc.</b> . . . . .	57
Badami Pipelines . . . . .	57
Endicott Pipeline . . . . .	63
Milne Point Pipelines . . . . .	66
Northstar Pipelines . . . . .	69

## **ConocoPhillips Alaska, Inc.** . . . . . 72

Alpine Pipelines . . . . .	72
Kuparuk Pipelines . . . . .	74
Oliktok Pipeline . . . . .	77

## **North Slope Borough** . . . . . 80

Nuiqsut Natural Gas Pipeline . . . . .	80
--	----

## **SOUTHCENTRAL PIPELINES . . . . . 84**

Kenai-Kachemak Pipeline . . . . .	85
Nikiski Alaska Pipeline . . . . .	88
North Fork Pipeline . . . . .	92

## **PROPOSED PIPELINE PROJECTS . . . 99**

## **SPECIAL PROJECTS . . . . . 102**

## **LESSEE ANNUAL REPORT SUMMARIES 107**

BP Exploration (Alaska) Inc. . . . .	108
ConocoPhillips Alaska, Inc. . . . .	121
Kenai-Kachemak Pipeline . . . . .	128
Nikiski Alaska Pipeline . . . . .	132
Nuiqsut Natural Gas Pipeline . . . . .	137
Trans-Alaska Pipeline System . . . . .	141

## **APPENDICES**

A: Acronyms and Abbreviations . . . . .	A-1
B: Staff Resources . . . . .	B-1
C: 2011 Annual Report Source Documents . . . . .	C-1
D: Acreage, Survey and Lease Information . . . . .	D-1
E: Right-of-Way Lease Appraisal Information . . . . .	E-1
F: Pipeline Physical Characteristics . . . . .	F-1
G: 2011 SPCO Reports . . . . .	G-1
H: Authorizations, Rights-of-Way and Permits . . . . .	H-1
I: Pipeline Throughput Information . . . . .	I-1
J: Lessee Contact Information . . . . .	J-1

## **LIST OF TABLES**

Table 1: SPCO-monitored Pipelines . . . . .	11
Table 2: FY11 Unscheduled Shutdowns . . . . .	25
Table 3: Major Spill Response Exercises . . . . .	43-44
Table 4: ADEC Field Inspections . . . . .	44
Table 5: TAPS Operational Drinking Water Systems . . . . .	46
Table 6: APSC Food Service Facilities . . . . .	47
Table 7: NNGP 2010 Summer Maintenance . . . . .	82
Table 8: BPXA 2010 Inspections . . . . .	108
Table 9: BPXA Comprehensive Monitoring . . . . .	111
Table 10: BPXA Corrosion Inspections . . . . .	111
Table 11: BPXA In-line Inspections . . . . .	112
Table 12: BPXA CUI Inspections . . . . .	113
Table 13: BPXA-operated Pipeline Throughput . . . . .	117
Table 14: CPAI Preventative Maintenance . . . . .	121
Table 15: CPAI Corrective Maintenance . . . . .	122
Table 16: CPAI Monitoring Efforts . . . . .	124
Table 17: CPAI Surveillance Inspections . . . . .	124
Table 18: CPAI-operated Pipeline Throughput . . . . .	126
Table 19: CPAI 2010 Events . . . . .	127
Table 20: KKPL Throughput and Pigging . . . . .	131
Table 21: Nikiski Pipeline Abnormal Conditions . . . . .	135
Table 22: Nikiski Pipeline Throughput . . . . .	136
Table 23: Nikiski Pipeline Reliability and Pigging . . . . .	136

Report Correction, Retraction and Amendment Guidelines . . . . .	156
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## Introduction to the SPCO



**The SPCO issues and provides oversight of AS 38.35 pipelines in Alaska. SPCO lease compliance specialists spend hundreds of hours each year monitoring pipelines and rights-of-way.**

State of Alaska policy, as referenced in Alaska Statute 38.35.010, mandates that development, use and control of a pipeline transportation system make the maximum contribution to Alaska human resources development, increase the standard of living for all Alaska residents, advance existing and potential sectors of Alaska's economy, strengthen free competition in Alaska's private enterprise system and carefully protect its incomparable natural environment.

The Commissioner of the Department of Natural Resources (DNR) has the authority to issue leases on state land for pipeline rights-of-way to transport products under conditions prescribed by Alaska Statute 38.35.015 and the associated administrative regulations. The Commissioner delegates the authority and responsibility to administer pipeline right-of-way leases, as allowed by Alaska Statute 38.35.210, to the State Pipeline Coordinator.

An administrative order, signed by Gov. Walter Hickel in 1987, established the State Pipeline Coordinator's Office (SPCO) within the DNR. Subsequent administrative orders designated the SPCO as the State's lead agency for issuing right-of-way leases under AS 38.35, the Right-of-Way Leasing Act, and coordinating the State's efforts related to the federal right-of-way grant process. The SPCO also coordinates the State's oversight of pre-construction, construction, operation and termination of all common-carrier pipelines.

## **Organization**

In addition to right-of-way and lease compliance specialists, engineers and administrative staff, the SPCO includes a representative from the Department of Fish & Game, Habitat Division; safety and electrical inspectors from the Department of Labor & Workforce Development; three representatives from the Department of Environmental Conservation, Spill Prevention & Response and Industry Preparedness programs, and inspectors/building permit reviewers representing the Department of Public Safety, State Fire Marshal's Office. A complete SPCO organizational chart is available in Appendix A.

## **Right-of-Way Leases**

A right-of-way lease includes a wide range of commitments and governs the conduct of both the State and the lessee. A lease remains in effect for the lifetime of the corresponding pipeline and addresses construction, operations, maintenance and termination. The intent of every lease is to preserve human health and environmental stewardship through safe and responsible pipeline operations.

To ensure that all pipeline activities are conducted safely and in compliance with all applicable laws and regulations, each lease incorporates a comprehensive set of stipulations that require conformance to multiple technical, environmental and other important conditions. The stipulations require lessees to establish specific processes, programs and systems to be implemented in all aspects of pipeline operations. When properly administered by the lessee and monitored by the SPCO, the stipulation requirements can effectively ensure the integrity of pipeline system operations.

The SPCO, in issuing and providing continued oversight of right-of-way leases, strives to limit duplication of efforts while utilizing the expertise of cooperating regulatory agencies. When other state or Federal regulatory agencies have jurisdictional authority over certain aspects of pipeline operations, the SPCO will work with the agencies and their respective subject matter experts and regulatory enforcement staff to ensure lease compliance.

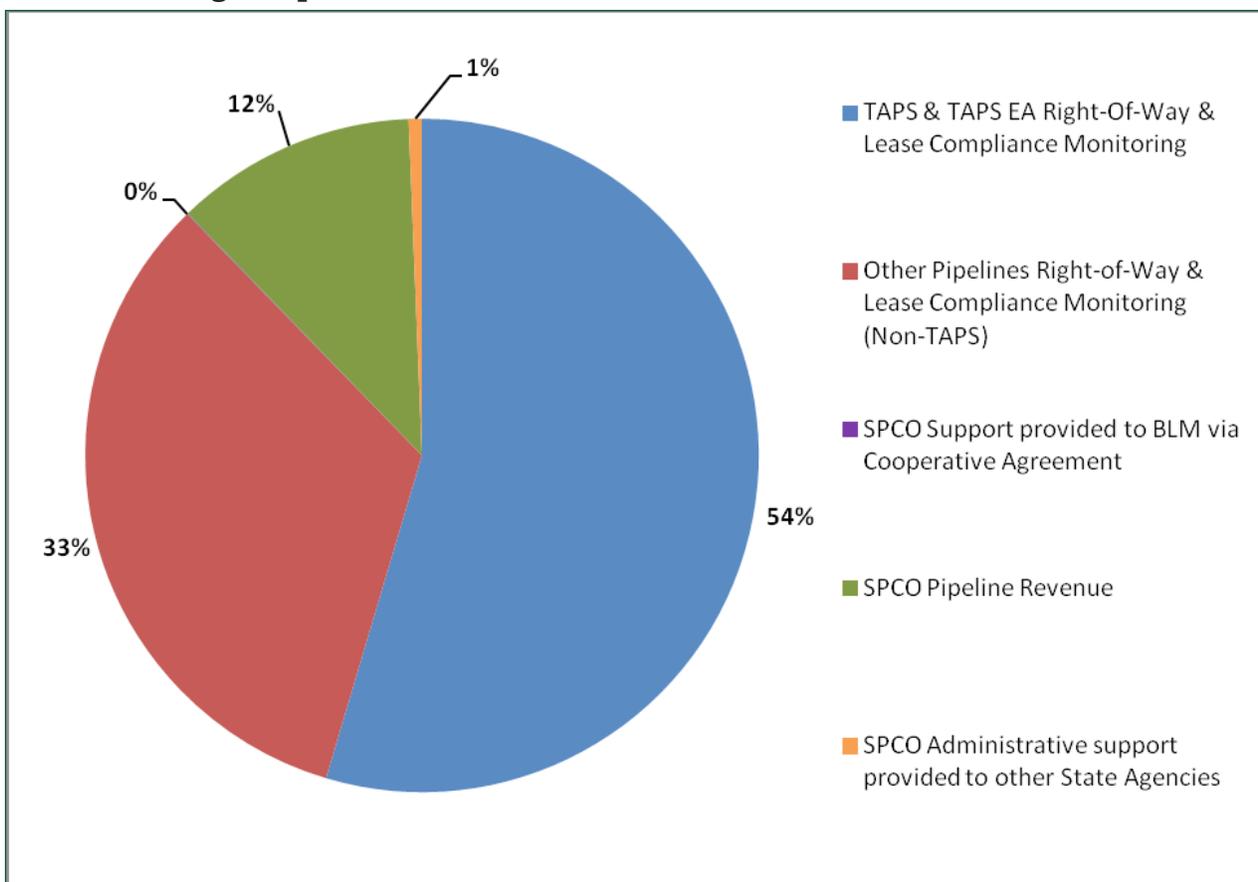
## **Sections Overview**

The SPCO comprises four main sections: administration, lease compliance and monitoring, right-of-way and permitting (ROW) and engineering.

## Administrative Section

The administrative section performs multiple functions critical to daily office operations. Administrative staff manage incoming and outgoing correspondence; right-of-way case files; and financial, procurement and other administrative records. Administrative staff also assist with public records requests and perform all administrative functions relating to personnel, payroll, recruitment, budgeting, grants and contracts, accounting, computer and network maintenance, facility management, property control, procurement and travel. In fiscal year 2010 (FY10), administrative staff coordinated and finalized more than 200 travel arrangements for SPCO compliance and right-of-way specialists to conduct pipeline compliance, assessment and inspection activities.

### SPCO FY10 Budget Expenditures



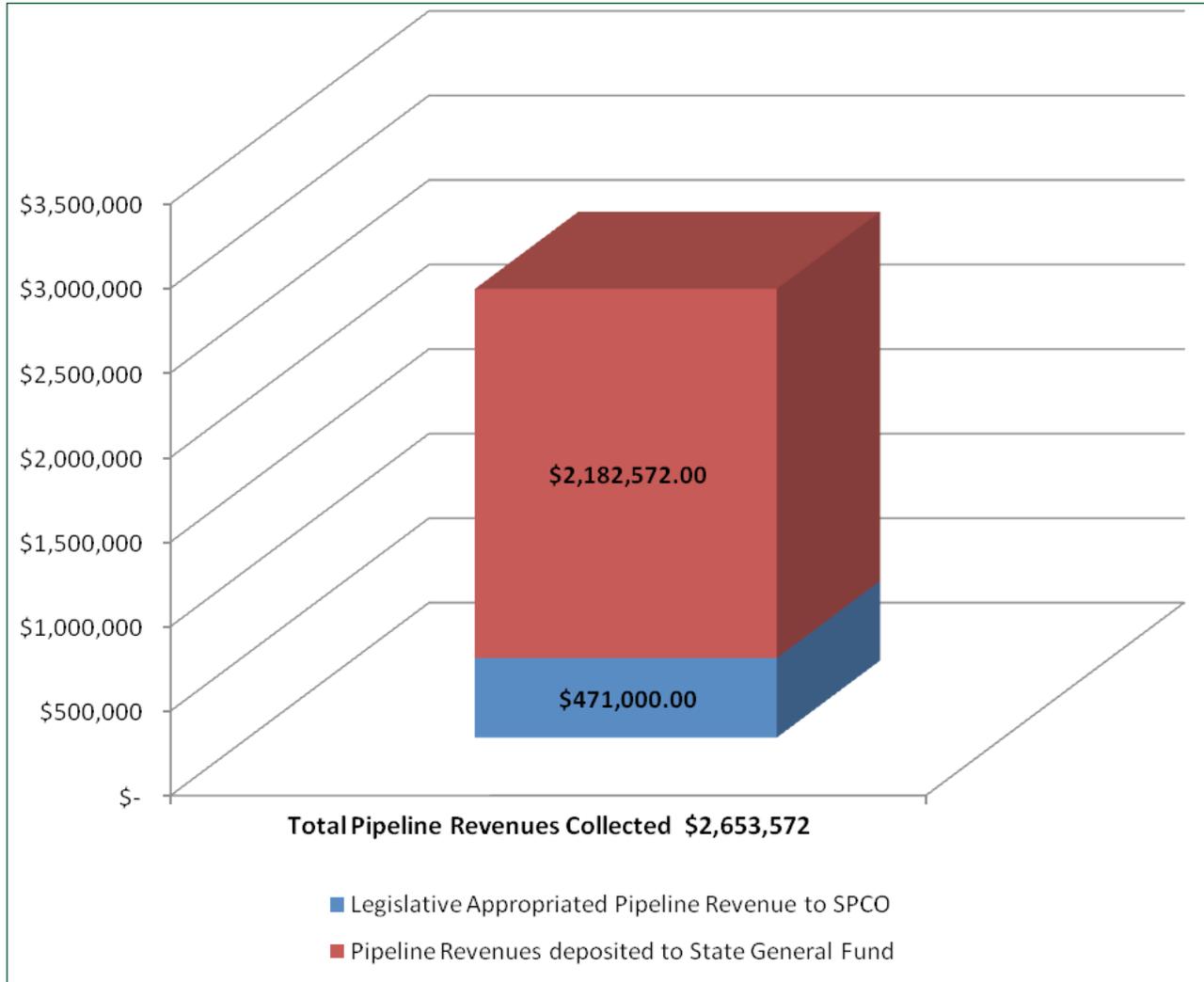
### Budget Overview

The SPCO budget is revenue-based and largely funded with reimbursements from industry. State agency representatives are supported through reimbursable service agreements administered by the SPCO; thus integrating the expertise and authority of multiple departments into one coordinated office. FY11 SPCO program costs totaled \$3,820,972.

On behalf of the State, the SPCO collects general fund/program receipts, also known as pipeline revenues, from lease payments, material sales and application

fees. Pipeline revenues are deposited in the State’s general fund. Each year, the Alaska Legislature appropriates some general fund monies to the SPCO, which are used to support operations unrelated to any specific pipeline lease. The FY10 net deposit (revenue collected minus legislative appropriation) to the general fund was 2.18 million dollars.

**SPCO General Fund Revenues**



## Lease Compliance Section

The role of the lease compliance section is to monitor AS 38.35 pipeline operations for compliance with the requirements of the corresponding right-of-way lease. The SPCO lease compliance program integrates three primary elements: compliance monitoring, lessee annual report monitoring and the SPCO annual report.

### Compliance Monitoring

The purpose of the lease compliance monitoring program is to routinely evaluate compliance with active lease requirements. Compliance team members first evaluate each lease requirement and then determine functional status relative to annual surveillance efforts. Many lease provisions are definitions or clarifications of legal/administrative language and do not require surveillance; other provisions apply to specific activity phases, such as construction or termination, and may not be applicable to surveillance and monitoring programs during normal pipeline operations. Some provisions, referred to as “conditional” provisions, are invoked only after an action initiated by the lessee or State Pipeline Coordinator.

The compliance monitoring program is dynamic and subject to change in response to changing conditions. An annual internal review provides an opportunity for SPCO staff to incorporate program improvements or other necessary modifications to the monitoring program.

Lease requirements cover a broad range of subjects; the compliance section frequently utilizes the expertise of the SPCO engineers, right-of-way specialists and other state agencies in order to maintain a comprehensive monitoring program.

The SPCO compliance monitoring activities comprise three primary categories:

### Project Review and Monitoring

Lessees submit proposals for construction and maintenance projects to the SPCO for review on a quarterly or annual basis. Projects are generally differentiated from baseline work by the requirement for project-specific regulatory permits and the subsequent need for engineering analysis and design.

For larger and more complex projects, SPCO and lessee staff (permitting specialists, land managers, subject matter experts and engineers) meet early in the planning



**SPCO lease compliance manager Jeff Bruno and safety liaison Ray Elleven observe a TAPS work crew at PLMP 626.**

process to identify and account for particular items of concern, such as the potential impact of project work on fish and wildlife habitats.

After the lessee and SPCO agree on the final design for a project, SPCO staff shift from a planning/permitting role to one of surveillance and verification. In addition to specific permit stipulations, many projects encompass a broad spectrum of lease requirements; compliance staff must adopt a multi-disciplinary approach when conducting surveillances. Compliance representatives employ the permit and lease requirements and the lessee's issued-for-construction (IFC) package to develop surveillance checklists, which they use in the field to verify compliance with the various safety, engineering, environmental and other regulatory requirements identified for verification.

### **Surveillance Monitoring**

Surveillances serve as independent compliance evaluations, as the factual basis for an assessment or technical report or as supporting documentation for an agency permit issuance-determination or verification. SPCO compliance representatives conduct planned and unplanned surveillances on SPCO-jurisdictional pipelines throughout the year and record their observations in surveillance and lease compliance reports.

### **Assessments**

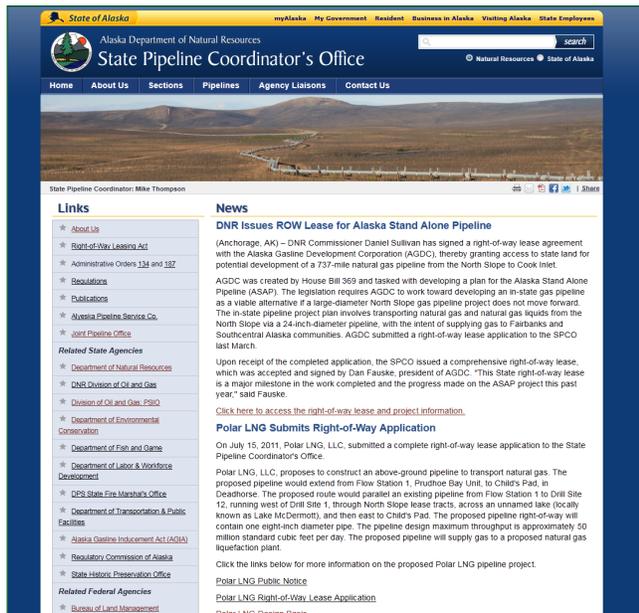
Assessments are broader in scope than surveillances and focus primarily on processes or systems, rather than specific lease or permit requirements. Compliance representatives must first identify the scope of an assessment and then gauge the appropriate level of sampling and the resources required to conduct the assessment. As an example, the steps below represent the process that an SPCO compliance representative would follow in order to conduct an assessment of a lessee's right-of-way surveillance and monitoring program.

1. Identify the lease requirements.
2. Determine the purpose of the assessment, usually to verify compliance with the identified lease requirements.
3. Define the scope of the assessment - will the assessment account for the entire surveillance and monitoring program or only a specific portion? The scope should also identify the facilities, activities, documents and employees included in the assessment.
4. Identify methods - establish the specific data collection methods. The compliance representative might, as part of the assessment, conduct new surveillances, review lessee records and documentation to evaluate compliance trends, interview lessee employees or utilize other methods deemed appropriate by the State Pipeline Coordinator.

- Analyze data – the compliance representative will integrate the available information and evaluate compliance with the requirements identified in the first step.
- Write assessment report – the compliance representative will produce a report summarizing the process, analysis and results of the assessment. The report may also include observations, recommendations or findings.

## SPCO Annual Report

The purpose of the SPCO Annual Report is to provide information about SPCO compliance, right-of-way and engineering activities and summarize the lessee annual reports for the public, industry and government audiences. Specifically, the report



provides background information about SPCO–jurisdictional pipeline systems, a summary of the SPCO oversight program, a description and the status of issues identified in compliance monitoring efforts and summaries of lessee annual reports.

Appendix C contains citations of major source documents for the SPCO Annual Report.



SPCO works with the lessees, through their quality assurance programs, to make certain that the information required to document compliance with the lease and lease stipulations is identified and, upon request, available for review. Several lessees have developed internal compliance matrices that list the lease requirements, parties responsible for managing compliance, necessary processes to manage each requirement, records expected from the process and applicable activities subject to the requirement.

**SPCO annual reports and hundreds of other documents are available online at <http://dnr.alaska.gov/commis/pco>.**

Many lease sections and stipulations impose requirements that are the same as, or overlapped by, legal requirements of state or federal laws or regulations administered and enforced by other regulatory agencies. To avoid duplication of efforts, SPCO will, when appropriate, defer to other agencies' regulatory enforcement to ensure compliance with lease requirements. SPCO monitors and reports on the enforcement activities as they relate to specific lease requirements.

## Engineering Section

The SPCO engineering section has several important functions. SPCO engineers provide technical oversight of facilities, equipment, infrastructure and activities on pipeline leases. SPCO engineers also provide, upon request, civil and technical engineering assistance and recommendations to liaison agencies, the DNR commissioner and the State Pipeline Coordinator.

The engineering section is responsible for verifying that lessees meet all technical requirements of each right-of-way lease. SPCO engineers verify that each lessee conforms to all applicable technical codes and regulations by conducting thorough code reviews and design basis examinations. In particular, SPCO engineers work to ensure that, as stated in AS 38.35, “the applicant has the technical and financial capability to protect state and private property interests,” that the lessee “maintain the leasehold and pipeline in good repair” and “promptly repair or remedy any damage to the leasehold.”

### Lease Pre-Application

Pre-application activities involve gathering information on the technical aspects of a proposed pipeline project. Design basis production and evaluation is one of the most critical phases of

the pre-application process for any pipeline. The purpose of the design basis is to provide a general description of the technical aspects of the project and demonstrate a commitment to design and build the pipeline and ancillary facilities in accordance with relevant codes, standards and regulations. The project’s design basis must be acceptable to both the SPCO and the lease applicant before an application is accepted.

### Lease Processing

During the lease processing stage, SPCO engineers carefully evaluate the capabilities of the lease applicant and prepare a recommendation to the State Pipeline Coordinator or the DNR Commissioner, identifying any conditions or requirements for approval.

### Lease Monitoring

Technical evaluation of pipelines and leasehold facilities comprise the bulk of the engineering section’s work. Specifically, SPCO engineers scrutinize significant



**In FY11, the SPCO hired Joe Kemp (second from left) to serve as the agency’s civil engineer.**

maintenance, repair and construction projects to provide for the State Pipeline Coordinator an independent opinion of leasehold activities. Activities related to the Trans-Alaska Pipeline System (TAPS) require the most effort on the part of the SPCO engineers; see the TAPS section of this document for more information.

### **Special Projects**

On occasion, the SPCO engineering section encounters significant items that do not have a direct relationship with a pipeline lease. Recent examples include:

- Assistance provided to other state organizations
- Assistance provided to the State’s support of a ConocoPhillips Alaska, Inc., appeal of the CD-5 permit denial by the U.S. Army Corps of Engineers

See the Special Projects section of this report (page 102) for more information.

## **Right-of-Way and Permits Section**

The SPCO right-of-way and permits section (ROW section) is responsible for a multitude of tasks related to pipeline lease administration. The ROW section processes lease applications and amendments, implements public processes (as required by state statute), prepares legal land contracts, writes decision documents, issues project-specific authorizations, administers rental and other payments, reviews letters of non-objection and performs myriad other functions as necessary or requested by the State Pipeline Coordinator.

### **Pre-lease**

The ROW section encourages all applicants to meet with SPCO staff prior to submitting a lease application. Pre-lease meetings help to coordinate realistic timelines and provide an invaluable opportunity to discuss potential obstacles or challenges to preparing and processing the lease application.

Pre-lease meetings provide the opportunity for the SPCO and the applicant to discuss the state statute requirements with regards to the public process, the specific expectations of the SPCO and ways to avoid or mitigate any environmental concerns. The ROW section also coordinates permitting for pre-lease applicants to help with field research, exploration and route alignment.

The SPCO issues a public notice after receiving a complete application from the project proponent. After the Commissioner’s Analysis and Proposed Decision is written, the SPCO issues a second public notice and continues to work on the draft lease. Comments received during the public review period are considered in the Commissioner’s Final Decision. If the applicant has met all the requirements and the State Pipeline Coordinator and DNR commissioner determine that the potential lessee is “fit, willing and able” to construct, maintain and eventually terminate the pipeline, then a lease can be issued.

## **Lease Issuance**

The DNR commissioner receives the proposed final lease after negotiations conclude and the applicant signs the document. After the commissioner agrees to and signs the document, it becomes a fully-executed lease. The SPCO provides an original of the lease for the applicant and maintains another original in state case files. All AS 38.35 pipeline right-of-way leases and amendments are available online at <http://dnr.alaska.gov/commis/pco>. Table 1 (see following page) contains a list of SPCO-monitored pipelines.

## **Lease Administration**

The ROW section is responsible for permitting or coordinating any activity associated with a lease. The ROW section is the main point of contact within the SPCO for land use and pipeline rights-of-way.

## **Permitting**

The ROW section issues lease authorizations for all AS 38.35 pipelines. For TAPS, the ROW section issues land use permits, temporary water use permits and rights-of-way for roads and boat launches required for operations and maintenance activities and special projects. The permit review process can involve a substantial amount of coordination; each project has unique lease or permit requirements, often depending on these factors:

- Type of work activity
- Project details (schedule, location, special circumstances)
- Land ownership
- Public notice requirements
- Public comments
- Navigable waters proximity
- Water use needs
- Coordination with state, Federal and local agencies
- Enforcement and jurisdictional implications
- Effect on habitats and wetlands
- Impact on fish and wildlife
- Engineering and surveying standards
- Land appraisals
- Potential to disturb historic, prehistoric and archaeological resources

## **Amendments**

The ROW section evaluates and adjudicates any necessary amendments to SPCO-jurisdictional leases. The lease amendment process is used to revise lease language or add lands to the existing right-of-way for maintenance and operation purposes, or both. The amendment process includes a Commissioner's Decision and public notice.

## **Other Administrative Duties**

The ROW section helps the SPCO records analyst update and maintain the SPCO case files, manages rental schedules, directs and processes payments, documents pipeline

activities, updates the State of Alaska electronic files, coordinates the lessee annual documentation requirements, updates legal descriptions and performs any additional tasks associated with lease administration for AS 38.35 pipeline right-of-way leases.

The ROW section also issues and manages material sales contracts with Alyeska Pipeline Service Co. and periodically conducts surveillance inspections of TAPS operations material sites.

**Table 1: SPCO-monitored Pipelines**

Issued Leases	ADL #	Location	Length (miles)*	Lessee(s)	Status
Alpine Diesel	415932	North Slope	34	ConocoPhillips	Operating
Alpine Oil	415701	North Slope	34	ConocoPhillips	Operating
Alpine Utility	415857	North Slope	34	ConocoPhillips	Operating
Badami Sales Oil	415472	North Slope	25	BPTA**	Operations Suspended
Badami Utility	415965	North Slope	31	BPTA**	Operations Suspended
Endicott	410562	North Slope	26	Endicott Pipeline Co.	Operating
Kenai Kachemak	228162	Cook Inlet	50	Kenai Kachemak Pipeline, LLC	Operating
Kuparuk	402294	North Slope	28	KTC***	Operating
Kuparuk Extension	409027	North Slope	9	KTC***	Operating
Milne Point	410221	North Slope	10	Milne Point Pipeline, LLC	Operating
Milne Point Products	416172	North Slope	10	Milne Point Pipeline, LLC	Operations Suspended
Nikiski Alaska	69354	Cook Inlet	70	Tesoro Alaska Pipeline Co.	Operating
Northstar Gas	415975	North Slope	17	Northstar Pipeline Co., LLC	Operating
Northstar Oil	415700	North Slope	16	Northstar Pipeline Co., LLC	Operating
Nuiqsut Natural Gas Pipeline	416202	North Slope	14	North Slope Borough	Operating
Oliktok	411731	North Slope	28	Oliktok Pipeline Co.	Operating
Trans-Alaska Pipeline	63574	Prudhoe Bay to Valdez	800	****	Operating

\* The lengths in the table are the approximate total length of the pipeline centerline.

\*\* BP Transportation (Alaska)

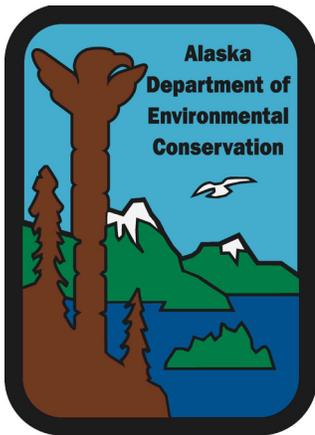
\*\*\* Kuparuk Transportation Co.

\*\*\*\* BP Pipelines (Alaska) Inc. (46.93%), ConocoPhillips Alaska Transportation Inc. (28.29%), ExxonMobil Transportation Company (20.34%), Unocal Pipeline Company (1.36%), Koch Alaska Pipeline Co. LLC (3.08%)

## SPCO Liaisons

### Alaska Department of Environmental Conservation

The broad mission of the Alaska Department of Environmental Conservation (ADEC) is to conserve, improve and protect Alaska's natural resources and environment and to control water, land and air pollution to enhance Alaskans' health, safety, welfare and economic and social well-being. As a SPCO liaison agency and a participating member of the Joint Pipeline Office (see page 15), the ADEC strives to accomplish its mission through implementing state statutes and regulations governing jurisdictional pipelines and facilities throughout Alaska.



Three full-time ADEC employees are located in the SPCO. The designated liaison provides technical and policy advice and overall coordination of ADEC efforts within the SPCO; the other two are environmental specialists and focus primarily on oil spill prevention and response readiness.

The ADEC liaison, Ron Doyel, provides coordination and policy guidance for implementing the requirements of ADEC's air quality, water, environmental health and contaminated sites divisions. The ADEC divisions oversee wastewater and solid waste operations and permits, air and water quality permits and management of contaminated sites. The ADEC liaison works with SPCO staff to ensure authorizations and permits issued by the SPCO are consistent with ADEC statutes and regulations. The ADEC liaison is a member of the Joint Pipeline Office management team.

The ADEC environmental program specialists, Graham Wood and Bill Haese, focus exclusively on oil discharge prevention and contingency plan (C-plan) requirements for TAPS and the Valdez Marine Terminal (VMT). The ADEC Spill Prevention and Response Division's industry preparedness program requires comprehensive review and approval of TAPS and VMT C-plans every five years.

C-plan activity oversight involves inspecting facility and response equipment, auditing records and conducting and evaluating oil spill response exercises. ADEC's prevention regulations provide for direct oversight of facility piping, crude oil storage tanks, secondary containment and the TAPS mainline. The SPCO engineers, along with licensed professional engineers in ADEC's industry preparedness program, provide continuous support to the environmental program specialists for technical analysis of compliance with prevention regulations.

## Alaska Department of Fish & Game

The Alaska Department of Fish & Game (ADF&G) liaison, Lee McKinley, acts primarily as a staff assistant to the director of the Habitat Division. The liaison's duties were expanded in 2010; in addition to managing ADF&G issues related to TAPS, the redefined position also serves as the ADF&G lead on a proposed gas line to the Donlin Gold mine site and the ADF&G liaison to the Petroleum Systems Integrity Office (PSIO). Lee administers the fish habitat permit program under Alaska Statutes 16.05.841 and 16.05.871, which includes issuing fish habitat and special area permits, commenting on other agency permits, conducting compliance inspections (using SPCO surveillance procedures) and, when necessary, taking enforcement actions.



The ADF&G liaison's mission is to ensure that pipeline activities avoid or mitigate foreseeable impacts to fish and wildlife resources, habitats and public use of fish and wildlife. Lee works with state and federal agencies, Donlin Gold, LLC, and Alyeska Pipeline Service Co. to review and provide input on design criteria, project plans, schedules, procedures, manuals, technical specifications, drawings, facility site selection, alignments and restoration or mitigation proposals pertaining to pipeline-related work, including:

- Pipeline pre-construction
- Construction
- Operation
- Maintenance
- Termination activities

Lee serves on the JPO management team, provides environmental comments for authorization requests under the state TAPS lease and federal grant, reviews TAPS and VMT oil spill contingency plans, participates in oil spill response events and drills and prepares surveillance reports and assessments that document the lessee's compliance with environmental and other lease and federal grant stipulations.

## **Alaska Department of Labor and Workforce Development**

The Alaska Department of Labor and Workforce Development (DOLWD) is represented within the SPCO by a safety liaison and electrical inspector; both positions focus primarily on TAPS.

Ray Elleven, the DOLWD safety liaison, serves as the SPCO program manager for worker safety and DOLWD technical and policy objectives. Ray conducts annual safety inspections of TAPS work sites and facilities, reviews project safety plans, monitors Alyeska Pipeline Service Co. accident statistics and represents DOLWD on the Joint Pipeline Office management team. Ray also serves as the SPCO safety manager and facilitates staff safety training.

Dan O'Barr, the DOLWD electrical inspector liaison and licensed Alaska electrical administrator, serves as the SPCO electrical safety program manager. Dan spends most of his time conducting routine and random inspections of TAPS facilities to ensure compliance with Alaska's electrical codes and licensing requirements. Dan has the legal authority, established by Alaska statutes and administrative codes (see SPCO website for detailed information), to enforce the National Electrical Code (NEC), State electrical codes and licensing requirements on behalf of the SPCO and the Joint Pipeline Office.

Dan is a member of the International Association of Electrical Inspectors (IAEI). Dan attends meetings and training sessions hosted by IAEI and other continuing education training on NEC requirements, and he maintains a journeyman electrician license.

## **Alaska Department of Public Safety, Division of Fire and Life Safety, State Fire Marshal's Office**

The duties of John Cawthon, one of the State Fire Marshal's Office liaisons to the SPCO, include, but are not limited to, fire inspections, construction and building inspections and building fire system plan reviews. John conducts inspections of facilities related to 18 SPCO-jurisdictional pipelines. Diana Parks, a fully-certified ICC building and fire code plans examiner, works with SPCO liaison John Cawthon to conduct building and fire and gas system plan reviews.

## Joint Pipeline Office

**M**ission Statement: To work proactively with Alaska's oil and gas industry to safely operate, protect the environment and continue transporting oil and gas in compliance with legal requirements.



The State/Federal Joint Pipeline Office (JPO) was created in 1990 to facilitate coordination between state and federal agencies in monitoring the Trans-Alaska Pipeline System (TAPS) and a proposed pipeline project to commercialize North Slope gas.

Since its inception, the scope of the JPO has increased to include petroleum and natural gas pipelines within the State of Alaska and the adjoining Outer Continental Shelf under the respective authorities or jurisdiction of one or more participating agencies.

The JPO is composed of representatives from the follow agencies:

### State Agencies

- Alaska Department of Environmental Conservation
- Alaska Department of Fish and Game
- Alaska Department of Labor and Workforce Development
- Alaska Department of Natural Resources
  - State Pipeline Coordinator's Office
- Alaska Department of Public Safety
  - Division of Fire and Life Safety
- Alaska Department of Transportation and Public Facilities

### Federal Agencies

- U.S. Department of Defense
  - Army Corps of Engineers
- U.S. Department of the Interior
  - Bureau of Land Management, Office of Pipeline Monitoring
  - Bureau of Ocean Energy Management, Regulation and Enforcement
- U.S. Department of Homeland Security
  - Transportation Security Administration
  - U.S. Coast Guard
- U.S. Department of Transportation
  - Pipeline and Hazardous Materials Safety Administration
- U.S. Environmental Protection Agency

JPO cooperating agencies share the desire to maintain a system-wide approach to pipeline oversight. The JPO Executive Council Agreement is available online at [www.dnr.alaska.gov/commis/pco](http://www.dnr.alaska.gov/commis/pco). Each agency has a unique mission; however, the participating agencies collectively focus their resources on oversight activities that facilitate the safe and reliable transportation of oil and gas to market. Administratively, the lead federal agency of the JPO is the Bureau of Land Management (BLM), represented by the Office of Pipeline Monitoring. The lead state agency of the JPO is the Department of Natural Resources, represented by the State Pipeline Coordinator's Office.

The JPO was formed to provide better service to the public and industry by eliminating duplication of efforts; coordinating activities; improving communication between agencies, industry and the public; sharing expenses and streamlining the permitting process. While all agencies retain their individual authorities, through the JPO they collaborate on administrative, technical and regulatory issues regarding jurisdictional oil and gas infrastructure. The terms of these collaborative efforts are described in the Operating Agreement for the Joint Pipeline Office, available online at [www.jpo.doi.gov](http://www.jpo.doi.gov).

## Trans-Alaska Pipeline System (TAPS)



**A**tlantic Richfield Co. and Exxon discovered the Prudhoe Bay oil field in March of 1968. The owner companies operating at Prudhoe Bay established Alyeska Pipeline Service Co. (APSC) in 1970 to build and operate TAPS. The State of Alaska and APSC entered into a right-of-way agreement on May 3, 1974; the lease was renewed in November of 2002. See Appendix D for more acreage, survey and lease information.

### **TAPS Owner Companies**

BP Pipelines (Alaska) Inc. (46.93%)

ConocoPhillips Alaska Transportation Inc. (28.29%)

ExxonMobil Transportation Company (20.34%)

Unocal Pipeline Company (1.36%)

Koch Alaska Pipeline Co. LLC (3.08%)

In 1977, construction of TAPS was completed and major oil production began on the North Slope. TAPS is composed of an 800-mile, 48-inch diameter pipeline, the Valdez Marine Terminal (VMT), 11 pump stations (original plans specified 12 pump stations, but only 11 were constructed) and various support facilities.

The State right-of-way lease applies to the 344 miles of State-owned land in the TAPS right-of-way. Information about the TAPS right-of-way lease appraisal can be found in Appendix E: Pipeline Right-of-Way Lease Appraisal Information.

Approximately 376 miles of federal lands and 80 miles of private lands (including

Native corporation and Native allotment lands) account for the remainder of the 800-mile pipeline. APSC owns 8.2 miles of the TAPS right-of-way, primarily consisting of lands associated with the VMT and pump station (PS) 1, PS8 and PS9.

North Slope crude oil enters TAPS at PS1 in Prudhoe Bay. TAPS crosses three major mountain ranges before reaching its terminus in Valdez. Three of the four active pump stations (PS1, PS3 and PS4) maintain the necessary pressure to pump crude oil over Atigun Pass, the highest elevation point along TAPS at an altitude of 4,739 feet (the elevation at PS1 is 22 feet above sea level). PS5 provides pressure relief as crude oil descends south of Atigun Pass.

APSC placed PS7 in warm standby mode in 2007. The fourth active pump station, PS9, provides pressure to push the crude oil over the Alaska Range and Thompson Pass and complete its passage to the VMT.

TAPS was built with 177 valves to isolate sections of the pipeline and minimize the size of a spill in the event of a pipeline rupture. The valves are placed to limit the amount of a spill, at any point along the pipeline, to a maximum of 50,000 barrels from static drain down. Valves are placed at major river crossings and other locations where quick response would be critical in a spill event.

The VMT is the TAPS terminus. The VMT spans approximately 1,000 acres along Prince William Sound near the Port of Valdez. At the VMT, oil is loaded on tankers for shipment. The VMT has a vapor recovery system for the crude-oil storage and relief tanks, a powerhouse, support facilities, crude storage, tanker berths, crude-oil handling systems and metering facilities.



**TAPS crosses three major mountain ranges before reaching its terminus in Valdez.**

Crude oil throughput in TAPS peaked at more than two million barrels per day in 1988. The subsequent decline in flow rate triggered a re-evaluation of operating conditions by APSC and the TAPS owners. APSC provided conceptual modifications in the Final Environmental Impact Statement for the TAPS right-of-way lease renewal in 2002; a conceptual engineering review was developed in 2003. The lessees approved changes to the pump station configurations, referred to as *strategic reconfiguration*. See the Strategic Reconfiguration/Electrification and Automation subsection on page 26 for more information.

For more TAPS historical information, visit the operator's website at [www.alyeska-pipe.com](http://www.alyeska-pipe.com).

**January 2011:****Booster Pump Module Leak and Cold Restart Incident**

During the morning of January 8, 2011, APSC personnel at PS1 discovered a leak in a booster pump module and oil in the basement area of the building. The booster pump piping leak and subsequent events cascaded into a larger incident that required APSC to operate TAPS under conditions of low flow and restart the pipeline in winter conditions after a period of slowed and stopped flow.

The oil spill response team initiated the Unified Command, which consisted of the Environmental Protection Agency (EPA), ADEC and APSC. The SPCO stationed personnel at the Unified Command during most of the event, in an advisory role.



**Workers line up the pipe sections for connection into the bypass pipeline. The new line bypasses existing pipe, where a leak was discovered on January 8, and reroutes crude oil flow coming from the booster pump building.**  
Photo credit: ADEC

The leak was located in a pipe at the wall of the module; all of the leaked oil flowed directly into the building at PS1, therefore hydrocarbon monitors positioned on the outside of the building never detected a reading. An APSC employee conducting routine inspections discovered the leak.

In response to the leak, APSC shut down the pipeline system and quickly developed plans to construct a 157-foot bypass pipe around the booster pump module. While TAPS was shut down, APSC evaluated options, planned

responses, procured materials and welded and installed the bypass pipe in order to restart the pipeline and proceed with repairs to the leak.

APSC and the regulatory authorities decided to allow a controlled leak during the initial start-up process for the pipeline. The decision was driven by the regulators' uncertainty of whether or not APSC could restart the pipeline in cold weather conditions after an extended shutdown. The unconventional approval was a prudent decision that might have averted far worse problems associated with ice formation in the pipeline had the shutdown continued.

In order to facilitate the start-up process in a controlled leak situation, APSC constructed a containment vault around the leak and removed oil using vacuum trucks. The total recovery estimate was 317 barrels.

APSC temporarily restarted TAPS on January 11 while work continued on the pipe bypass. Soon after midnight on January 15, APSC shut down TAPS again to allow for

the final installation of the bypass piping. APSC started up the system a second time during the morning of January 17.

Following the second start, APSC staged staff at segments of TAPS that were considered vulnerable to cold restart problems. Both APSC and the regulatory authorities were concerned about the potential for ice formation in the coldest portion of the pipeline (from Chandalar to PS8) and the associated risk of ice plugging the intake screens or damaging equipment and instrumentation at PS9. The screens at PS9 experienced differential pressure transients, but none was high enough to initiate an operational or emergency shutdown. The most likely cause of the differential pressure transients was chunks of wax impinging on the screens and eventually being extruded through the opening. Although TAPS reached fluid temperatures sufficient to initiate ice formation, APSC found no evidence of ice in the pipeline system.

An SPCO observer noted that the lowest fluid temperatures during this time reached 25.7 degrees Fahrenheit. The lowest temperature noted during previous winter shutdowns was 37 degrees Fahrenheit. APSC successfully operated TAPS in unprecedented conditions, outside of the bounds of the pipeline's original design basis.

The ice that may potentially form within TAPS is saline ice. The freezing point of saline ice is more complex than fresh-water ice. The temperature of saline ice formation depends upon several factors, principally salt content. The freezing temperature of a liquid saline solution also changes with the amount of ice formed. SPCO staff report that the type of water found in TAPS could begin freezing at 28 degrees Fahrenheit.

APSC had positioned thermal instrumentation near existing electrical power supplies and data communications infrastructure; specifically, at TAPS pump stations and remote gate valves. During the winter months, cold air temperatures tend to pocket in valleys and low areas. Under certain conditions, colder, denser oil may circulate down to low points inside the pipe. Un-instrumented sections of TAPS may have experienced fluid temperatures below the lowest-recorded level. APSC workers attempted to obtain wall temperatures in some of these areas, but the inherent difficulties of field temperature measurement prevented them from obtaining reliable information.

After the second restart, APSC attempted to mitigate operational risks, primarily those involving ice or bulk paraffin wax. APSC crews recirculated oil at pump stations



**Workers install the bypass pipeline inside the metering building.  
Photo credit: ADEC**

and through tank heaters and brought PS7 into operational status, to be used as a line heater by recirculating oil and transferring the energy of the pumps to the TAPS fluid. APSC mobilized equipment as needed, heating four critical temperature transmitters using temporary shelters and staging replacement parts, materials and repair crews.

APSC and the oversight agencies paid close attention to PS9 operations after the second restart. The oil in the coldest section would first arrive at an area of PS9 with major rotating equipment. The operator and observers were concerned that ice could plug the intake screens or damage pumps and instrumentation. The anticipated problems did not occur, but APSC remained on standby for weeks after the shutdown event.

Two cleaning pigs were trapped in the pipeline when APSC shut down TAPS in response to the PS1 leak. During shutdown, excessive wax and solids can accumulate; the cleaning pigs push contaminants and can create a “debris cloud” that settles when a pig’s movement is interrupted. If a pig cannot resume movement, it can affect the flow of crude through the pipe and potentially stop other pigs in the pipeline.

On January 14, APSC crews retrieved one of the trapped cleaning pigs in a bypass that was originally intended to launch smart pigs. After the second restart, APSC retrieved



**A scraper pig similar to the two that were in the pipeline during the January shutdown.  
Photo credit: ADEC**

the remaining pig in Valdez. Although APSC was able to recover both pigs without incident, the situation highlighted the potential for problems associated with pipeline pigging during and after a cold restart scenario.

In the months after the second restart, APSC addressed the risk of deploying pigs with additional internal deposits in the pipeline by using modified pigs with lower durometer ratings and slightly reduced diameters. APSC’s plan was to use softer and smaller pigs initially and increase the hardness and size gradually.

## TAPS Historic Low-flow/Cold-restart Issues



**During the shutdown in January of 2011, an SPCO observer noted that the crude oil temperature in TAPS dropped to 25.7 degrees Fahrenheit. The lowest temperature noted during previous winter shutdowns was 37 degrees Fahrenheit. APSC successfully operated TAPS in unprecedented conditions.**



Low output from Prudhoe Bay caused fluid temperatures in TAPS to drop to about 40 degrees Fahrenheit. Although no major operational problems resulted from the low temperatures, APSC was forced to use intermittent pumping for the first time.



TAPS flow was reduced because high winds at the VMT disrupted tanker loading for long periods. Internal temperatures in TAPS reached 37 degrees Fahrenheit at the coldest instrumented point. APSC employed intermittent pumping.



TAPS flow was stopped twice while a leak was repaired. Internal temperatures reached 25.7 degrees Fahrenheit at the coldest instrumented point.

## TAPS Operational Risks



### Ice Formation

At 28 degrees Fahrenheit, the water in TAPS will begin to freeze into saline ice that could damage pumps, clog screens and disable instrumentation.



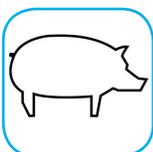
### Bulk Paraffin

As fluid temperatures in TAPS decrease, greater amounts of wax and asphaltenes (dense oil) will begin to drop out of solution.



### Viscosity Changes

Lower-temperature oil will result in greater pressure loss, which will affect the hydraulic gradient and energy requirements for shipping oil.



### Pigging Difficulties

Increased wax and other solids deposited during low flows or after a cold restart can stop a pig. Carefully-sized and engineered pigs may have to be used to control deposits until normal pigging can be restarted.



### Water Dropout

At lower velocities, water will drop down to the bottom of the pipe. Contact of water with the bottom of the pipe could increase internal corrosion rates.



### Soil Heave

Buried portions of TAPS may experience soil refreezing as temperatures decrease.



### Gelling

At fluid temperatures well below the ice formation temperature, wax will precipitate out as a matrix within the solution, transforming oil into a gel. Gelled fluid, a thixotropic substance, does not flow as easily or predictably as a typical crude oil, a Newtonian fluid.

## Potential Mechanisms to Address TAPS Operational Risk

The State and industry have focused efforts to increase flow in TAPS and encourage production on the North Slope and in the offshore Arctic. Increased crude oil throughput in TAPS would offset the operational challenges associated with low flow. Physical modifications have been initiated, with more planned to mitigate low flow problems. Physical changes to the system may include items such as:

### Increased Insulation/Heat Tracing

APSC is testing the installation of an insulation blanket and embedded heat trace.

## **Maintaining an Operational PS7**

APSC had scheduled PS7 for cold shutdown and eventual isolation; however, the pump station played an important role in the extended winter shutdown and subsequent restart in January of 2011. The station functioned as a line heater by recirculating oil within the facility before reinjecting the warmed oil into TAPS.

## **Turbine Heat Recovery**

Line heaters powered by waste heat from the Strategic Reconfiguration electrical power turbine generators may increase fluid temperature.

## **Line Heaters**

Fluid heaters powered by electrical power, natural gas, diesel or heating oil, or locally refined oil may increase fluid temperature.

## **Emulsifiers**

Injection of emulsifiers could blend the water into the oil phase and reduce the strength of ice formed in the pipe.

## **Freeze Depressants**

Methanol or similar chemicals can combine with water and reduce the point at which it hardens to ice.

## **Improved Vents and Drains**

During a shutdown, water will drain from higher to lower elevations in the pipe. Should sufficient water collect at low points and a shutdown persist long enough, freezing could potentially burst the pipe.

Some of the above proposed solutions can only be employed in flowing scenarios. Some improvements, such as line heaters, will only add significant heat if TAPS is still flowing and will be ineffective if TAPS is shut down. Many of the proposed improvements may take years to implement. New oil discoveries may also take many years to develop and produce.

APSC made minor changes and improvements in FY11 in an effort to prepare for low flow operations during the winter months. APSC crews modified a valve at PS7, to be used for oil recirculation in the event of an extended winter shutdown. APSC is developing plans to bring mainline unit (MLU) 2 online at PS7 to double the horsepower available for recirculation. APSC installed rain caps on certain parts of the jacket system, laid out contingent recirculation piping and installed an insulation blanket and heat trace on a span of pipe as a test.

More significant modifications and larger projects will take time to complete, but along with increased oil production, they will reduce the probability of ice formation. Although increased oil flow is one proposed solution to cold restart issues, TAPS will remain vulnerable to occasional upsets in upstream operations that reduce throughput

and cause a low-flow and cold restart scenario. Both increased North Slope oil production and mechanical modifications are needed to ensure continued TAPS operations.

## **TAPS Low Flow/Cold Restart Ice Study**

During the last week of the FY11 reporting period, APSC released a study on ice formation and low flow, a project initiated after a low-flow event in November of 2006. In 2007, the SPCO reviewed the study plan and provided comments to APSC.

The study identified water dropout, consequent corrosion, ice formation, geotechnical stability and wax and other solid deposition as potential operational risks to TAPS. The study also identified problems at throughput volumes between 300,000 and 600,000 barrels per day and concluded the line could be operated at a throughput volume of 350,000 barrels per day if a number of issues are addressed, primarily mechanical modifications.

### **Ice Formation**

The study determined that unless crude is heated, as flow rates drop below 550,000 barrels per day, freezing of the water in the oil is likely during winter, potentially creating problems such as disabling instrumentation, check valves and equipment. Ice could develop at flow rates of 780,000 barrels per day without the hot residuum currently returned to the pipeline by two refineries at North Pole.

### **Solids Deposition**

Wax deposition increased during the 1990s as the internal fluid temperatures dropped below its formation temperature of approximately 75 degrees Fahrenheit. This trend is expected to continue (maintenance pigging schedules, locations of pigging facilities and types of pigs might be changed or adjusted to partially or fully accommodate some of these changes).

### **Water Dropout**

Water is entrained at current throughputs in most parts of the pipeline, but it will start separating in more locations as flows drop below approximately 500,000 barrels per day. Water dropout will increase the potential for preferential internal corrosion at the bottom of the pipe.

### **Geotechnical or Foundation Problems**

With no heating of the oil, the study expects refreezing of buried sections of the mainline when throughputs drop to 350,000 barrels per day or less. The areas of concern are primarily areas of warm permafrost with the potential for lens formation and resultant heave. The APSC ice study predicts that displacement limits and possible overstress conditions would be reached at 300,000 barrels per day.

### **Pigging Issues**

As temperatures in the mainline decrease, more wax and asphaltenes will accumulate, making it increasingly difficult to use pigs in the pipeline.

### **Leak Detection Issues**

The TAPS leak detection system, Leading-Edge Flowmeter (LEFM), relies on correlations between pressure, temperature and volume to detect leaks.

## **APSC Strategic Reconfiguration/Electrification and Automation**

APSC completed strategic reconfiguration facilities at PS3, PS4 and PS9 in previous years. Strategic reconfiguration adjustments consisted of installing smaller pumps, variable frequency drives, electrical motors and connections to a commercial electrical grid or turbine generators.

In FY11, APSC began construction on the last phase of the project, at PS1. APSC describes the PS1 strategic reconfiguration work as “electrification and automation.” The initial electrification and automation work performed at PS1 in FY11 involved the installation of medium and high-voltage electrical wire in long trays or in conduit – this phase of the project will continue during the summers of 2011 and 2012. APSC anticipates that it will complete the PS1 electrification and automation project in 2014.

Strategic reconfiguration facilities operated as they have in previous years; several minor shutdowns occurred, but none lasted a significant amount of time or reduced TAPS throughput. Availability is defined as the percentage of time that a pump station is online and available for its purpose. The graph on the following page shows the record of PS3 after its second startup in March 2008 to the present. The design basis lists a target of 99.0% availability.

### **PS3 Availability**



The trend for availability of the strategic reconfiguration facilities, from startup to the present, is flat. The facilities continue to have minor sporadic outages that do not affect TAPS throughput. The root causes of the January 2011 PS1 booster pump incident did not involve any strategic reconfiguration equipment or facilities.

## **TAPS Fuel Gas Line**

The TAPS fuel gas line (FGL) has a history of heaving and subsidence in certain locations. Much of the FGL movement could be attributable to its unique design. Most of the route is buried in permafrost. APSC has attempted to monitor heave and subsidence with monitoring rods, which are rods cad-welded to the top of the pipe and extended through a conduit to the surface. The monitoring rods provided only a few hundred data points and are a suspected corrosion feature.

Within the past five years, APSC began using a new method to monitor the FGL movement. APSC periodically conducts a light detection and ranging (LiDAR) survey to monitor the surface elevations above the pipeline. Utilizing in-line inspection (ILI) inertial pipeline mapping techniques (a Geopig®), APSC determines the elevation of the FGL centerline. APSC can then determine the burial depth on a foot-by-foot basis. APSC also monitors a layer of sub-grade insulation placed in the soil above the FGL. The insulation board becomes exposed at the surface at a heave location; however, because the insulation was placed above the FGL during construction, it is an excellent indicator of pipe movement. APSC has committed in its new maintenance manual to rebury the pipe and insulation where the insulation breached the surface.

The TAPS strategic reconfiguration project included plans to discontinue fuel gas heating at PS3 and PS4. APSC first discontinued fuel gas heating at PS3, but soon discovered that the facility experienced liquid dropout in the fuel line. Consequently, APSC stopped completely its plans to discontinue fuel gas heating at PS4. APSC attempted various remedies to the liquid dropout at PS3 and ultimately decided on a new electric heater installation. The heater went into operation in FY11 – to date, it has been successful in preventing a recurrence of liquid dropout in the line.

## SPCO FY11 TAPS Activities - Lease Compliance



**In 2011, SPCO lease compliance staff traveled the length of the TAPS right-of-way to conduct surveillance inspections of the pipeline and related facilities.**

Throughout the 2011 fiscal year, the SPCO conducted surveillances and reported on the condition of the TAPS right-of-way and facilities, maintenance activities and administrative protocols. The lease compliance section's activities on TAPS in 2011 yielded 42 surveillance reports, 14 lease compliance reports and two assessments (see Appendix G for a complete list of reports). Below is a summary of SPCO TAPS activities.

### **July 2010:**

#### **TAPS Scheduled Maintenance Shutdown**

SPCO compliance staff traveled to Atigun Pass on July 3, 2010, to observe a maintenance project on TAPS involving the repair or replacement of several pipeline support shoes. The maintenance project was executed in unison with a scheduled shutdown of TAPS to avoid any complications potentially created by the vibrations occurring in the pipeline in the area below Atigun Pass.

The section of TAPS near Atigun Pass crosses lands that are authorized for use under the Federal Agreement and Grant of Right-of-Way for TAPS (FF12505), which is managed by the Bureau of Land Management Office of Pipeline Monitoring. The SPCO compliance staff's observations focused on those elements of the project that could affect human health and safety or the line-wide operation and maintenance of the pipeline system, or both.

Prior to the project, APSC workers installed cribbing below the damaged shoes to ensure that the pipeline would be adequately supported should the damaged shoes fail. During the surveillance inspection, SPCO staff observed contractors executing project work in a manner that satisfied lease requirements (SPCO Lease Compliance Report 10-SPCO-R-022).

**August 2010:****Right of Way Surveillance**

SPCO compliance staff traveled the length of the TAPS right-of-way and conducted related surveillance inspections during two separate trips in August of 2010. SPCO staff conducted surveillances primarily along the pipeline work pad, which they accessed using a 4x4 vehicle.

The SPCO compliance staff's intent in traveling the TAPS right-of-way was to make general observations of the right-of-way condition from PS1 to the VMT. SPCO compliance representatives documented abnormalities such as sinkholes, impassable low-water crossings and maintenance activities such as brush clearing, pipeline support repair and pipeline excavations for pipe casing removal.

Based on observations made during the surveillance inspection, the SPCO found the pipeline right-of-way to be in a condition that satisfied the requirements of the TAPS lease (SPCO Lease Compliance Report 10-SPCO-R-030).

**September 2010:****Pipeline Excavation**

On September 15th, 2010, SPCO compliance staff traveled to pipeline milepost (PLMP) 765, where APSC was conducting a pipeline excavation to remove a pipe casing. While at the project site, SPCO staff observed the work crew back-filling a section of the excavation. The excavation had been divided into three sections. APSC workers were back-filling the middle section during the SPCO visit. APSC began work on the middle section so equipment could operate from on top of the pipeline in this section to execute project work on the other two sections.

According to APSC staff, the section of the pipeline being back-filled was inspected, repaired, sandblasted, coated, connected to existing cathodic protection system and covered by a series of sand slurry boxes prior to the SPCO visit. While observing the back-filling of the excavation, SPCO staff was informed that the back filling process was being executed according to Alaska Department of Transportation and Public Facilities (DOT&PF) specifications.

The DOT&PF specifications required that the bedding material backfilled immediately around the pipeline (or the slurry boxes that now encase the pipeline in this location) be compacted to no less than 95% of its maximum density. This required that backfill lifts did not exceed eight inches in height and that compaction be performed by hand in close proximity to the pipeline. In order to ensure proper compaction, lines demarcating backfill lifts were painted on the slurry boxes.

While on site, SPCO compliance staff observed workers operating in a safe and deliberate manner. All workers donned personal protective equipment (PPE). SPCO staff noted that a ledge on the northern wall of the excavation was used to store cutting torch fuel tanks and other miscellaneous objects.

### **November 2010:**

#### **Darling Creek Incident**

Early fall rainwaters in the Delta River drainage basin exposed approximately 60 feet of the TAPS mainline pipe at Darling Creek. The pipe was exposed due to scour from the creek's high velocity during the event. The coating on the pipe was damaged, but there was no mechanical damage to the pipe. APSC performed emergency repairs in November of 2010 to protect the pipe until permanent repair plans could be made. APSC planned to complete permanent repairs in September of 2011.

The permanent repairs will consist of the following:

- Covering the exposed pipe with non-frost susceptible material
- Installing an extension of the existing guide bank downstream past the exposed pipe section
- Installing an anti-scour layer of rock parallel to the pipeline on the downstream side across the river's alluvial fan

The SPCO reviewed the APSC repair plans and determined that the proposed design will withstand future flood events equal to that of the rain event in the fall of 2010. The extension of the guide bank will have several benefits along TAPS. A better-defined channel for the river should greatly reduce the erosion problems at Darling Creek. The reduction of aufeis around check valve #80 will give APSC year-round access to the valve.

APSC's plans to install the anti-scour rock layer downstream of TAPS to prevent a high-water event from exposing the pipe within the existing alluvial fan. The extension of the guide bank should alleviate concerns of erosion around the pipe at this site, but APSC will employ the rock layer to further reduce the risk of scour reaching the mainline.

### **November 2010:**

#### **Pigging Incident**

On November 16, 2010, APSC launched a maintenance pig at PS4. On November 25, an APSC crew located pieces of the pig in the PS5 discharge relief piping. According to APSC reports, the pig was in transit in the mainline near the relief header when TAPS underwent an unscheduled shutdown. The APSC Operations Control Center (OCC) initiated a shutdown when a military aircraft reported a potential spill (a subsequent investigation proved the spill report to be a false alarm).

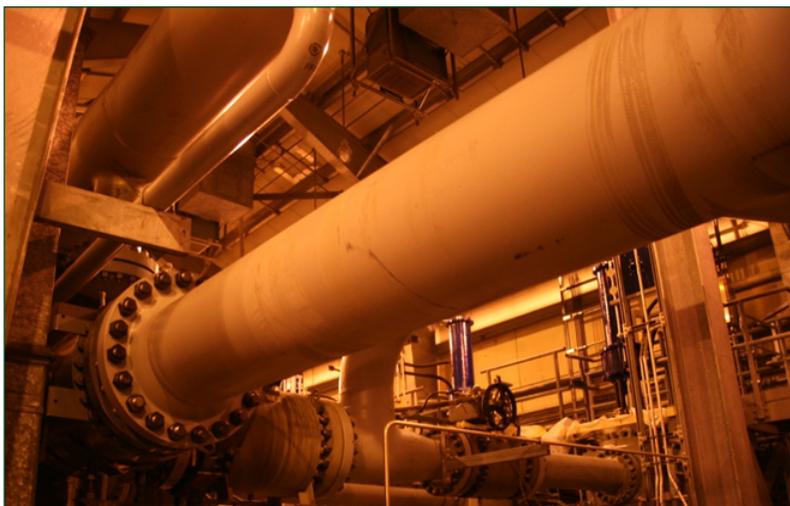
During a shutdown, reliefs and pressure surges occur. TAPS was designed to accommodate such transients; however, the November shutdown was the first reported occurrence of a pig being in the line and opposite a relief header during a shutdown. The inlet and outlet branch connections to the mainline had pig bars that were intended to stop a pig from entering, but the pig might have been broken apart and damaged the bars – the debris could have extruded through the bars, or moved through the bars with the fluid flow. APSC left the pig pieces in place and constructed approximately 50 feet of 16-inch piping to bypass the partially blocked relief header section.

### **December 2010:**

#### **PS5 Discharge Relief Piping**

In December of 2010, SPCO compliance staff traveled to TAPS PS5 to investigate an event in which a scraper pig was inadvertently pulled into the pump station discharge relief piping. The incident resulted from an unscheduled shutdown of TAPS initiated by the OCC after a credible source reported a potential oil spill. The shutdown caused the PS5 relief valves to open automatically, thereby creating pressure that pulled the scraper pig backward through the mainline piping and into the discharge relief piping (see previous section for more information).

The discharge relief piping is shared by the pump station crude injection system.



**Bypass piping installed at PS5 around obstructed discharge relief/ crude injection piping.**

Because the discharge relief piping was obstructed, APSC was unable to move crude from the break-out tank, Tank 150, back to the mainline. The blocked piping limited the capacity of the PS5 pipeline relief facilities for three days. A functional PS5 relief system is necessary for the normal operation of TAPS. SPCO compliance staff observed APSC efforts to reduce the levels in Tank 150 and the planning for both a temporary and permanent fix to the obstructed piping (SPCO Lease

Compliance Report 10-SPCO-R-033).

### **January 2011:**

#### **PS5 Discharge Relief Piping Follow-up**

In January of 2011, SPCO compliance staff traveled to PS5 to check the temporary bypass piping constructed around the obstructed piping. APSC installed bypass piping as part of the crude injection system used to pump crude from Tank 150 back to the mainline. Installing the bypass piping allowed APSC to effectively drain the break-out tank at PS5 after relief events and rendered the PS5 pipeline suction relief system fully

functional (SPCO Lease Compliance Report 11-SPCO-R-002).

At the time of reporting, the pipeline discharge relief system at PS5 remained obstructed by the scraper pig; however, the pump station meets U.S. Department of Transportation/Pipeline and Hazardous Materials Safety Administration (USDOT/PHMSA) pipeline relief capacity requirements. APSC is planning major project work to replace the plugged piping in the summer of 2012.

### **May 2011:**

#### **TAPS Spur Dike Breaches**

On May 21, 2011, the Sagavanirktok River flooded at PLMP 47.2, partially breaching Spur Dikes 6, 7 and 8. APSC personnel mobilized equipment to the site and secured the remaining portions of the spur dikes to ensure the integrity of TAPS.

Once the emergency work was completed, APSC began designing permanent repairs to be constructed in July. Normally these projects wouldn't be constructed until late September or early October, but with the dikes compromised and the possibility of heavy rains in August, the repairs was expedited to avoid additional damage.

APSC permanent repairs consisted of repairing the dikes back to their existing conditions and then installing a three-foot windrow on the upstream sides to prevent future high water events from breaching the dikes. APSC crews installed a diversion dike to help keep the river away from the dikes during construction. The diversion dike will be left in as a sacrificial dike, giving TAPS an added layer of protection against the river.



**Spur Dikes 6, 7 and 8 were partially breached during a May flood event on Sagavanirktok River.**

APSC began repair work at the end of July and finished in late August. Riprap lined the shanks of Spur Dikes 7 and 8, adding significant strength. APSC is uncertain of what flood stage these dikes can now handle, but it appears that a future flooding event would be less likely to breach the spur dikes.

The SPCO will confer with APSC to determine if further upgrades are needed or if the present design is adequate. The spur dikes were first breached and subsequently repaired in August of 1995. Both the 1995 and 2011 floods were extraordinary events, but the potential consequences of the spur dike breaches (i.e., serious damage to TAPS) warrant further investigation of all the options available to provide the maximum level of protection.

The SPCO believes that for future projects in the area, APSC should analyze flood data and determine at what elevation(s) the spur dikes should be set. With this data, APSC can determine the flood stages that would threaten the spur dikes and TAPS.

### **Assessment of APSC Follow-up to the PS1 Gas Excursion Incident**

In FY11, SPCO lease compliance staff completed an assessment that documented APSC's progress in accomplishing the recommendations generated by the TAPS Pump Station 1 Sadlerochit Stream Gas Excursion Incident Investigation Report (dated February 23, 2009). This assessment was initiated by SPCO lease compliance staff in FY10 and was described in the SPCO FY10 Annual Report.

The SPCO assessment found that the North Slope operators with connections to PS1 are in the process of developing and documenting notification protocols. BP Exploration (Alaska), Inc. (BPXA) has several procedures in place and a management of change (MOC) document developed as a result of the PS1 venting incident in January of 2009; the MOC document and procedures require advising process safety experts if the potential to affect the specifications of crude delivered to PS1 exists, but do not indicate when or how BPXA would isolate its system from TAPS in the event of a gas excursion. The SPCO assessment found that, although APSC personnel have maintained communications with North Slope operators with regards to the development of notification protocols, APSC personnel's understanding of the North Slope operators' notification protocols is not documented.

APSC stated verbally and in writing that communications between APSC and North Slope operators occurs prior to any project work conducted upstream of PS1 that may affect the pump station. The SPCO assessment found that APSC's review of upstream activities is not documented. In addition, the procedures APSC uses to guide the review of upstream activities are not specific and do not clearly define APSC's role in review processes of projects on assets not operated by APSC. The SPCO assessment found that APSC has not kept training records of North Slope operator facility reviews and related APSC personnel training, or, conversely, PS1 facility reviews and related North Slope operator training. APSC has not documented its personnel's understanding of upstream equipment, operations or hazard mitigations.

The SPCO continues to work with ASPC to ensure that it has the administrative procedures in place to protect PS1 from activities conducted upstream of the pump station (SPCO assessment 10-SPCO-A-003).

### **PS3 Strategic Reconfiguration Technical Drawings**

SPCO compliance staff conducted an assessment of APSC document control and drawing completion processes associated with the strategic reconfiguration project at PS3. The SPCO assessment evaluated APSC's compliance with requirements of the TAPS right-of-way lease. Under Section 23 of the lease, Compliance with Notices to Proceed, the assessment evaluated APSC's compliance with Memorandum of Agreement 18, which was referenced as a requirement within the SPCO's notice to proceed for PS3 strategic reconfiguration.

SPCO compliance staff documented three satisfactory findings under Section 6, Books, Accounts and Records; Access to Property and Records. APSC maintains records to track project drawings and documents and the appropriate delegation of strategic configuration system responsibility throughout the project. APSC made available to the SPCO all records and information related to the assessment's primary objective and demonstrated that staff and contractors had access to drawings and documents through multiple sources.

SPCO compliance staff identified two satisfactory findings while evaluating APSC's performance under Section 16, Construction Plans and Quality Assurance. APSC assured the SPCO that staff and contractors had access to the most current drawings and other documents which may be critical to the safe operation and maintenance of the pipeline system. APSC demonstrated the effective management of project drawings and documents by following transfer of custody and through the use of APSC records management systems; however, by failing to update the PS3 strategic configuration drawings within 180 days, APSC failed to comply with Section 23, Compliance with Notices to Proceed, Stipulation 1.18 Surveillance and Maintenance, and part of Section 16, Construction Plans and Quality Assurance.

On December 6, 2010, APSC notified the SPCO that the PS3 strategic reconfiguration technical drawings had been loaded into the APSC system. In that letter, APSC requested an extension for completing the ancillary documents. SPCO granted an extension until September 30, 2011. On September 28, 2011, the SPCO received APSC's confirmation that ancillary document updates were complete. SPCO will verify the status during fiscal year 2012.

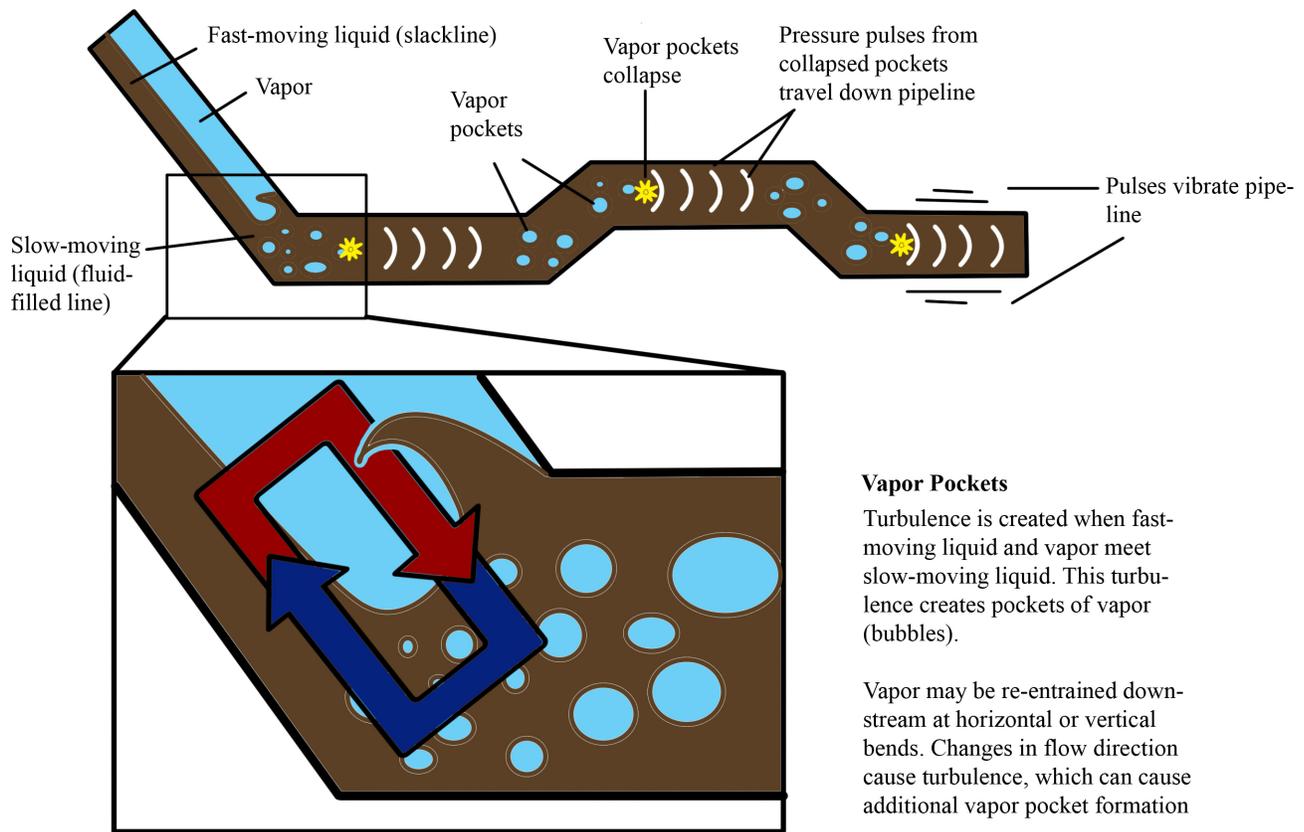
### **TAPS Vibrations in Atigun Pass**

TAPS reaches its highest point in Atigun Pass, where the elevation of the pipeline is 4,739 feet. On the south side of the pass, the oil gains energy as it drops in elevation, trading the potential energy of higher elevations for kinetic energy and pressure at lower elevations.

The pipeline vibration issues at Atigun are similar to those experienced at Thompson Pass more than a decade ago. The same primary mechanism is at work at both sites. Oil cascades down from higher elevations, starting the drop in a partially-filled section, called a slackline. At a lower elevation, the pipeline is again completely filled with fluid at the interface point, where the fast-moving liquid in the slackline meets the slower moving liquid in the fully filled section and energy is released and dissipated. This section is filled with turbulence. Some of the energy is released in the form of physical forces, which create vibrations.

The diagram below provides a depiction of the mechanism creating vibrations at Atigun and Thompson Passes.

### Theorized Mechanism of Vibrations at Atigun Pass



Low throughput in TAPS causes the pipeline vibrations at Atigun Pass. The reduced flow creates a longer section of slackline, and hence a longer drop for fluids. Continued changes in the flow rates of TAPS may result in greater or lesser vibration in the future.

Vibrations create fatigue in the welds and the parent metal. The vibrations typically act in a mathematically predictable manner, based upon the number and the amplitude of cumulative fatigue cycles. APSC produced an analysis of the effect of the vibrations on the pipe in July of 2010. The analysis indicates that stresses in the vibrating section are not of sufficient amplitude and frequency to create a risk of rupture.

APSC found cracks in a number of pipeline support devices, called “shoes,” in the Chandalar Shelf area, the location of the most powerful vibrations. APSC determined that most or all of these cracks were likely caused by residual stress from welding during the original construction-era fabrication. APSC’s investigation determined that the geometry of the weld contributed to the cracks. In some locations, the

fissures propagate from the welds through to the base metal. The fact that the shoes are fillet-welded also contributed to the shoe-cracking. Fillet welding can create stress risers as the weld metal cools, creating localized stresses at the toe of the weld.

The shoes used for the above-ground sections of TAPS were only designed for compressive loads (supporting the weight of the pipeline). Vibration introduces a lateral force component for which the shoes were not designed, and the fillet welds are not the optimal type to sustain flexing in the lateral direction.

APSC issued a new procedure for repair or replacement of the damaged shoes, TPP-MR-48-03-003. The SPCO produced an independent engineering evaluation that agreed with most of the analysis and remedial work performed by APSC, but questioned how APSC determined the location of the highest vibration within Chandalar Shelf. The Chandalar Shelf area has changes in elevation and terrain, making the location of the interface point between slackline and fluid-filled line difficult to verify.

## SPCO FY11 TAPS Activities - Right-of-Way Section



**During FY11, the ROW section conducted inspections and completed surveillance reports for the 27 operating material sale sites on state land along TAPS between Deadhorse and Fairbanks.**

**D**uring FY11, the SPCO right-of-way section completed 28 authorizations in support of TAPS maintenance and repair activities, including:

- Five temporary water use permits or amendments
- 10 land use permits
- One material sale contract
- Two authorizations to operate equipment outside the right-of-way (per Lease Stipulation 2.9.1)
- Two TAPS right-of-way lease amendments (PLMP 766.6 and PLMP 47)

Authorizations are listed in more detail in Appendix H: Authorizations, Rights-of-Way, and Permits Issued by SPCO.

### **Mineral Material Site Surveillance**

During FY11, the ROW section conducted inspections and completed surveillance reports for the 27 operating material sale sites on state land along TAPS between Deadhorse and Fairbanks (SPCO reports 10-TAPS-S-152 to 10-TAPS-S-171 and 10-TAPS-S-179 to 10-TAPS-S-187). A list of all surveillance reports completed by the SPCO in FY11 can be found in Appendix G.

SPCO ROW staff inspected the sites between June and August of 2010 to determine compliance with the material sale contracts, mining and reclamation plans and TAPS lease stipulation 2.6 (material sites). SPCO ROW staff found the material sites to be clean and well-maintained.

### **Land Use Permits**

The ROW section is responsible for administering the permitting process at the SPCO. APSC applies for land use permits for various maintenance and construction activities along TAPS when additional land use area, outside the existing right-of-way, is required to perform the projects. The maintenance and construction activities include, but are not limited to, low-water crossings and pipeline work pad maintenance, below-ground pipe excavation, soil investigations, mineral material storage and oil spill contingency sites and Conex storage.

APSC tracks projects that require permitting and applies for permits in advance of project work. Other permit applications result from observations or surveillances by either APSC or SPCO staff, or from unexpected events such as floods and wind storms.

### **Temporary Water Use Permits**

The ROW section authorizes temporary water use permits for the use of water resources on state land related to the TAPS right-of-way. If the water source is from an anadromous fish stream, then special requirements may be added to the permit to protect fish and other wildlife. The special provisions typically include intake placement ` guidelines, special screening requirements and water intake velocity. Temporary water use permitting efforts are coordinated with the SPCO ADF&G liaison.

### **TAPS Right-of-Way**

#### **Amendment:**

#### **Cathodic Protection System, TAPS Access Road 7 APL-2, PLMP 766.6**

The SPCO issued the “Amendment of the Right-of-Way Lease for the Trans-Alaska Pipeline, ADL 63574, Cathodic Protection System, TAPS Access Road 7 APL-2, PLMP 766.6” to APSC on August 26, 2010. The SPCO issued the amendment for the construction and maintenance of a cathodic protection system between TAPS and the Tsaina River, within the existing right-of-way for TAPS access road 7 APL-2.



**In FY11, the SPCO ROW section issued an amendment for the construction and maintenance of a cathodic protection system between TAPS and the Tsaina River.**

APSC constructed two gravel pad extensions along the access road. The gravel pads provide cover for, and access to, a new underground 12,000-gallon propane tank and the area for the new generator building. The gravel pads also provide access to the four new semi-deep groundbed wells that were installed near the Tsaina River bank. The system will protect the below-ground TAPS by improving cathodic protection, thereby reducing corrosion between PLMP 758 and PLMP 766.

**TAPS Right-of-Way Amendment:**

**Buried Sill, TAPS PLMP 47**

The SPCO issued the “Amendment of the Right-of-Way Lease for the Trans-Alaska Pipeline, ADL 63574, Sagavanirktok River, PLMP 47” to APSC on September 9, 2010, for the construction and maintenance of buried sill near PLMP 47. The purpose of the sill is to protect the integrity of the buried check valve #12 (CV12). The main channel of the Sagavanirktok River recently shifted, and the buffer between the river and the pipeline is as little as 30 feet in this area. The existing protection for the pipeline in this location consisted of Spur Dikes 5 and 6. A severe flood event could breach Spur Dike 5 and accelerate erosion upstream of Spur Dike 6 near buried CV12. APSC crews installed the sill east of CV12 between the TAPS work pad and the end of the existing rip rap that extends from Spur Dike 6.

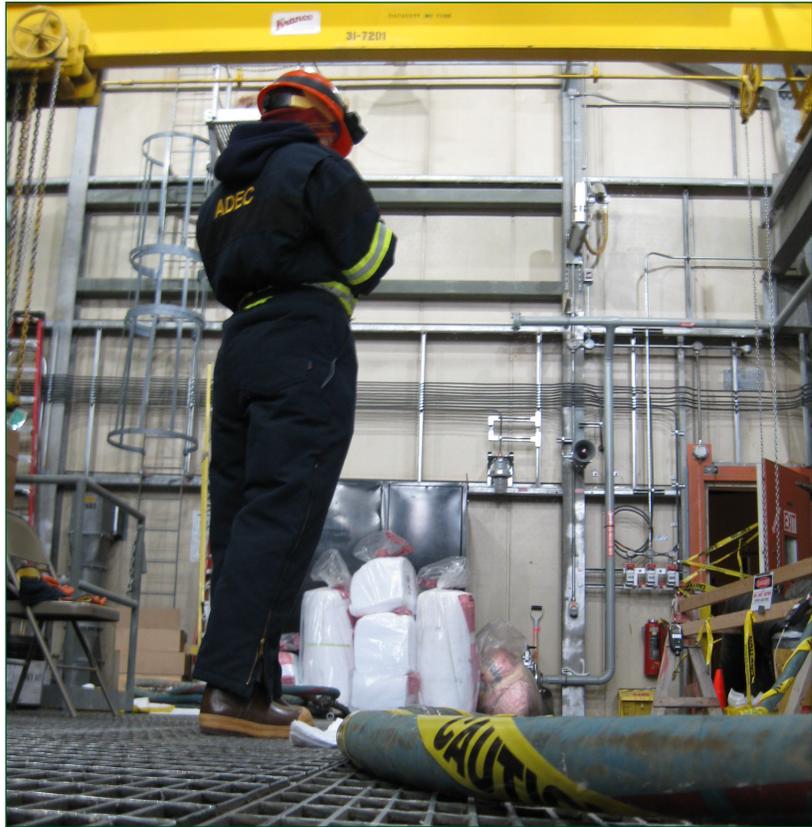
## Department of Environmental Conservation Liaison FY11 TAPS Activities

The booster pump piping leak at PS1 in January of 2011 (see page 19) highlighted the need for a comprehensive plan to address issues associated with TAPS cooling during an extended shutdown.

APSC approached ADEC in February 2011 to seek pre-application guidance for the installation of heaters at various TAPS pump stations. APSC proposed several heater locations, but has not made definitive plans to install heaters at specific pump stations. Most locations would require meteorological data collection for future modeling and permit application criteria. The proposed pump stations were PS5, PS6, PS7, PS8 and PS9. In May of 2011, APSC submitted to the ADEC a quality assurance project plan for meteorological data collection towers at PS5 and PS8, which were reviewed and approved by ADEC.

APSC also approached ADEC in May of 2011 to request a determination that APSC would not need minor permits to install and operate emergency pumps at PS7, PS9 and PS12. APSC

proposed to install a 540HP booster pump at PS7, PS9 and PS12 and a 3,390HP pump at PS12. APSC stated that the sole purpose of the emergency units was to prevent crude oil gelling and icing in the event of an extended pipeline shutdown during the winter months. ADEC determined that it did not require minor permits for the emergency equipment as proposed by APSC and forwarded that determination to APSC on May 26, 2011 (ADEC letter, Cold Restart Emergency Engines Permit Applicability – TAPS Pump Stations 7, 9, and 12).



**An ADEC responder observes spill containment and recovery operations in the PS1 booster pump building.  
Photo credit: ADEC**

## **TAPS Pipeline C-Plan**

The current TAPS Pipeline Oil Discharge Prevention & Contingency Plan (C-Plan) was approved on November 30, 2006. ADEC approved four minor amendments in FY11. A formal hearing concerning a challenge to the 2006 TAPS Pipeline C-Plan approval was concluded in early FY09. ADEC is awaiting a proposed decision from the hearing officer. The administrative hearing process has concluded, but this issue remains open until a decision has been reached.

A spill response planning group, composed of APSC, ADEC and JPO representatives, meet regularly to facilitate oversight of the TAPS Pipeline C-Plan and ensure compliance with Alaska statutes and regulations. The purpose of the meetings is to coordinate plan amendments, drills, exercises, inspections, audits and emerging issues. Eight response planning group meetings were held in FY11.

On May 16, 2011, APSC submitted to ADEC the renewal application for the TAPS C-Plan. ADEC completed a sufficiency review on May 23; a 30-day public review period began on July 1.

### **Associated Actions**

On December 15, 2010, ADEC issued a notice of violation to APSC for using above-ground storage tanks without proper approval. APSC addressed all the issues identified in the notice of violation, with the exception of the disposal of surplus tanks. The notice of violation will remain in effect until APSC resolves the remaining issue of concern.

On April 1, 2011, ADEC issued a letter to APSC requiring evaluation of the secondary containment liner for Tank 190 at PS9. The letter was part of the ADEC response to an overfill incident in 2010. APSC requested a waiver for the secondary containment requirement. ADEC is reviewing the request and discussing specific waiver conditions with APSC.

### **Valdez Marine Terminal C-Plan**

The VMT C-Plan coordination group meets quarterly to discuss on-going oversight and coordination of activities, compliance, emerging issues, exercises, inspections and scheduling of response drills. ADEC and BLM staff participate in these meetings and are joined by USCG personnel when available. For a spill originating at the VMT, USCG is the designated federal on-scene coordinator. USCG has specific jurisdiction over other VMT activities associated with marine operations that are critical to implementation of the VMT C-Plan.

The Prince William Sound Regional Citizens' Advisory Council (PWSRCAC) is a member of the VMT C-Plan coordination group and participates regularly in meetings and review of the VMT C-Plan.

The VMT C-Plan was renewed at the end of FY08. In FY11, ADEC reviewed and approved two routine amendments to the VMT C-Plan. An amendment is considered minor if it is determined that it does not diminish the plan holder's ability to respond to an oil discharge.

In FY11, APSC introduced an initiative to rewrite Scenario 5 of the response planning standards in the VMT C-Plan. The APSC proposal was subsequently changed to include a reorganization of the entire VMT C-Plan. Two workshops involving the VMT C-Plan coordination group, APSC and other subject matter experts convened to work on this process. The project is ongoing and will continue into FY12.



**The Valdez Marine Terminal and corresponding facilities spread out over more than 1,000 acres of Prince William Sound coastline. ADEC participates in quarterly meetings of the VMT contingency planning group to discuss on-going oversight and coordination of agency activities.**

### **Associated Actions**

In January of 2010, ADEC determined that APSC's fishing vessel program was not adequately resourced, as demonstrated by a failure to have the required number of vessels available for response. APSC reached compliance with this requirement on July 27, 2010. On February 18, 2011, ADEC sent APSC a letter indicating that the mitigation measures put in place for the fishing vessel shortfall could be discontinued. The letter required that APSC implement a system to prevent future shortfalls. ADEC continues to provide oversight of the issue to ensure program compliance.

### Other Activities at the VMT

Early in FY09, ADEC and the JPO were made aware of leaking catch basins and manholes in the secondary containment systems at the VMT. Secondary containment is required by 18 AAC 75.075 and stipulation 3.11 of the lease and grant.

ADEC and BLM issued enforcement actions requiring corrective plans and action for the faulty components of the secondary containment systems. During the summer and fall of 2009, APSC crews worked to repair the secondary containment systems at the VMT. Further repairs and testing took place during the summer and fall of 2010, when additional leaks to secondary containment piping were discovered. ADEC participated in an APSC risk assessment to determine temporary mitigations pending final repairs. An addition was made to the notice of violation originally issued in FY09 to include the newly discovered piping leaks. The notice of violation remains active, pending APSC’s completion of final repairs and agreement to conduct regular maintenance and adhere to inspection schedules. APSC completed a life-cycle evaluation study and issued a report with proposed repair alternatives for the leaking piping. A decision on final repair alternative has been made and final repairs will be made after APSC selects a qualified contractor to perform the work.

### Drills and Inspections

ADEC has regulatory authority to require C-Plan holders to conduct oil spill response exercises. APSC incorporates specific requirements for exercises into both the TAPS and VMT C-Plans. In FY11, ADEC staff participated in eight major spill response exercises along the TAPS right-of-way and at the VMT (see Table 3).

Each plan holder conducts at least one incident management team (IMT) exercise every year. At these exercises, the ADEC response team is led by a regional ADEC state on-scene coordinator. The state and federal on-scene coordinators and incident commander (with their respective staff) form the Unified Command. The Unified Command is responsible for executing an effective response.

**Table 3: Major Spill Response Exercises**

Date	Facility	Exercise Type	Location	Agencies
7/23/10	VMT	Unannounced IMT callout drill	VMT	ADEC, BLM
8/13/10	TAPS	Combined resources spill response/equipment deployment	Delta River/Phelan Creek	ADEC, BLM, EPA
8/24/10	TAPS	Mutual aid drill, IMT and equipment deployment	Kuparuk River & Fairbanks	ADEC, BLM, SPCO, EPA
10/5/10	VMT	IMT and deployment exercise	VMT	ADEC, BLM

10/9/10	PWS/VMT	Unannounced nearshore tactics drill, common tactics with PWS tanker plan	Prince William Sound	ADEC, USCG
12/20/10	TAPS	Unannounced incident response team call out exercise	Fairbanks Response Base	ADEC, BLM
4/14/11	VMT	Unannounced IMT callout drill	VMT	ADEC, BLM
6/21/11	TAPS	Combined resources spill response/equipment deployment	Glennallen Response Base, Gunn Creek & Summit Lake	ADEC, BLM

ADEC has the statutory and regulatory authority to conduct compliance inspections for C-Plan commitments and prevention requirements and to evaluate APSC’s response readiness. A key component of drill and exercise oversight involves assessment of readiness and training for response. ADEC conducts inspections based on priorities established in cooperation with the JPO oil spill team. During FY11, ADEC staff conducted eight field inspections (see Table 4).

**Table 4: ADEC Field Inspections**

Date	Focus	Location	Agencies
7/19/10	Tank 190 secondary containment	PS9	ADEC
9/15/10	Equipment, containment sites and facilities inspections	GRB*, TAPS	ADEC, BLM
9/15/10	Inventory and inspection of response equipment	GRB	ADEC, BLM
12/21/10	Unannounced equipment inspection, winter and summer response trailers	APSC Nordale Yard	ADEC, BLM
01/08/11	Response equipment and staging, pig recovery, cold restart preparation and activities related to the PS1 incident	TAPS	ADEC, PERP
2/24/11	On-site procedure review, pig removal facility, on-site procedure review and screen removal site, cold restart equipment and preparation	PS8, PS9	ADEC, BLM
6/8/11	Inspection of secondary containment and mitigation measures	Tank 16 at VMT	ADEC, PERP
6/22/11	Piping, tank and secondary containment	Tank 190 at PS9	ADEC

\* Glennallen Response Base

## Environmental Health

ADEC regulates drinking water, food and sanitary practices through its Division of Environmental Health. The Environmental Health program's involvement with TAPS includes the permitting of solid waste disposal, pesticides, drinking water distribution and food service activities. Environmental Health's oversight encompasses the entire pipeline system; including pump stations, response bases, support facilities, work pads and temporary camps.

### Solid Waste Disposal

APSC maintains three ADEC-permitted solid waste disposal (SWD) sites on TAPS. The APSC solid waste subject matter expert administers the permits, and the local pipeline and civil maintenance coordinator (P&CM) is tasked with the proper collection, storage and disposal of waste into the permitted facilities. The disposal facilities were reviewed in FY11 during the annual JPO environmental review. No compliance issues were identified at these facilities in FY11. Permits for the disposal facilities will expire in July of 2011; APSC is in the process of submitting renewal packages for each of the three facilities.

APSC incorporated site-specific operational requirements for SWD sites into company environmental procedures to ensure compliance with both ADEC and TAPS lease and grant requirements. During FY11, APSC applied for, and received from the BLM, long-term grants for the property associated with SWD facilities.

In 2011, APSC continued its ongoing effort to retire assets in facilities that are no longer required to support TAPS operations. Associated with this plan, APSC has conducted a review of its existing and anticipated needs for these disposal sites and an evaluation of available disposal options. ADEC will continue to review APSC asset retirement plans and provide support to other SPCO agencies to ensure APSC activities remain in compliance with applicable state requirements.

### Pesticides

The mission of ADEC's pesticide control program is to regulate and permit the safe use of pesticides in Alaska to protect human health and the environment. Stipulation 2.2.5.1 of the TAPS lease and grant requires that APSC receive approval from the State Pipeline Coordinator and the BLM Authorized Officer prior to using pesticides on the TAPS right-of-way.

Alaska Pesticide Control regulations, 18 AAC 90, require permits for the application of pesticides within the TAPS right-of-way. The regulations also require that any government official or agency that approves, directs or conditions the use of a pesticide be certified to apply the specific pesticide being considered. The ADEC liaison coordinates with ADEC pesticide program staff, the SPCO and JPO to ensure the requirements of Alaska law and the lease and grant stipulations are understood and fulfilled. This on-going coordination assists APSC project planners and strengthens SPCO and JPO oversight efforts.

## Drinking Water

The ADEC drinking water program ensures that systems supplying drinking water meet the minimum health standards required by Alaska drinking water regulations. The program provides oversight of these systems to ensure compliance with regulations and system-specific monitoring plans, tailored to test and demonstrate system safety and compliance. During FY11, APSC maintained 14 ADEC-approved drinking water systems for TAPS facilities. ADEC staff conducts drinking water system monitoring at TAPS pump stations, response bases, support facilities and temporary camps.

ADEC oversight of APSC drinking water systems includes design review, system installation, operation and maintenance. Preconstruction review and monitoring of operational records and test results are the primary oversight functions of the program.

In order for APSC to alter, renovate or improve a public water system, it must have written approval of engineering plans that comply with the requirements of 18 AAC 80.205. APSC must submit drawings and calculations, with a seal and signature from a registered engineer, for a public water system. The plan review and approval process consists of two stages: approval to construct and approval to operate.

ADEC conducts sanitary surveys to ensure water systems are installed and operated properly. Alaska Administrative Code defines a sanitary survey as “an onsite review of the water source, and the facilities, equipment, operation, and maintenance of a public water system.” (18 AAC 80).

**Table 5: Operational Drinking Water Systems on TAPS**

Permit #	Location
AK2333788	5-mile well/spring
AK2320751	MCCF #2 Camp
AK2312863	Nordale Yard
AK2293008	PS11
AK2333039	PS1
AK2320036	PS4
AK2350023	PS5
AK2360727	PS6 Fly Camp
AK2360036	PS6
AK2300303	PS7
AK2370691	PS9
AK2293164	VMT East
AK2330004	VMT Fabrication Shop
AK2291944	VMT West

All of the ADEC-regulated APSC drinking water systems have remained in compliance through the past 12 months, with the exception of one minor violation at the VMT East. A loss of a limited amount of turbidity recording equipment data occurred during planned maintenance; APSC addressed the with no indication of a compromise to water treatment and public health. All of the APSC systems are due for a regular sanitary survey in 2013. APSC is in full compliance with the ADEC requirements outlined in 18 AAC 80.

### Food Service

The food safety and sanitation program’s mission is to protect public health at regulated facilities and to prevent illness, injury and loss of life caused by unsafe sanitary practices.

Every food service facility associated with TAPS, both permanent and temporary, is required to maintain a food service permit issued by ADEC. The emphasis of the program’s inspection is to focus attention on risk factors that have been shown to be directly linked with the causes of food borne illnesses. A risk factor is a condition that allows the continuation, survival and growth of pathogens that can make people sick, and intervention is a control measure that prevents food borne illness or injury. The permitted TAPS facilities operated in compliance with ADEC regulations during FY11.

**Table 6: APSC Food Service Facilities**

Permit #	Location
63300014	PS4
363300016	PS6
363300028	PS5
363300029	PS7
363300036	MCCF # 3
24680268	Valdez Terminal Café
351022297	Alyeska Pipeline Café

ADEC drinking water, solid waste, food safety and sanitation program staff work with the SPCO’s ADEC liaison to coordinate approvals and compliance for the facilities along TAPS.

### Division of Water

ADEC’s Division of Water oversees compliance with the water quality standards outlined in 18 AAC 70 permits. The permits are administered under the Alaska Pollutant Discharge Elimination System (APDES) program, 18 AAC 83. The requirements of 18 AAC 70 (water quality) and 72 (wastewater) also apply to TAPS operations.

The transition of primacy of the National Pollution Discharge Elimination System (NPDES) from the EPA to ADEC and the APDES is in progress, and the first three phases of the transfer are complete. Phase IV, which will include permits associated with the oil and gas industry, originally scheduled to be completed in October of 2011 will be delayed until October 2012 to allow for on-going EPA permitting actions. Phase IV will transfer primacy for the remaining permits administered under the EPA NPDES program to the State of Alaska, giving ADEC primacy of the entire program.

In FY11, ADEC staff reviewed each activity for compliance with approved wastewater discharge permits. ADEC also reviewed SWD sites and active operations material sites for storm water compliance. ADEC reported no TAPS wastewater violations in FY11 .

APSC continues to work on the VMT ballast water treatment (BWT) facility redesign (project Z576). The division of water continues oversight and coordination with SPCO and JPO agencies. The NPDES permit for the BWT facility expired in 2009; EPA is facilitating the renewal process for this permit.

## **Division of Air Quality**

The mission of ADEC's air permits program is to protect the environment by ensuring that air emissions from industrial operations do not create unhealthy air.

The public notice for renewal of the VMT air quality permit closed on May 23, 2011. Before issuing the final permit to APSC, ADEC will prepare a draft final packet and send it to the EPA for a 45-day veto period. ADEC anticipates that APSC will appeal several aspects of the draft packet. Division of Air Quality staff have met with APSC representatives and are working to reconcile any disagreements over the draft permit. ADEC expects to issue the VMT air quality permit in November of 2011.

ADEC's air quality permit specialists routinely conduct on-site inspections and compliance reviews of TAPS facilities. Regular inspection activities ensure that APSC is operating in accordance with applicable ADEC permits and standards. During FY11, ADEC conducted seven full compliance reviews on TAPS facilities and noted 37 compliance violations. None of the issues were severe enough to jeopardize the permit; ADEC program staff are working with APSC representatives to resolve each issue addressed in the compliance reviews.

Open burning and dust suppression, both regulated by 18 AAC 50, continue to be a routine activity along the TAPS right-of-way. APSC conducts open burning to reduce the volume of wood waste in remote locations. Open burning is an efficient disposal technique that reduces pollution potential and saves space at TAPS SWD sites. APSC also requests open burning approvals for firefighter training at TAPS facilities.

APSC conducts routine dust suppression activities at TAPS pump stations and project sites. Some of these dust control efforts are governed under general permits issued by the ADEC air quality program, which stipulate specific control measures and methods. Dust control activities involving certain chemical agents may require additional permits. Dust suppression activities and requirements are coordinated through ADEC, the SPCO and JPO .

### **Oil Discharge Prevention and Contingency Planning**

Oil Discharge Prevention and Contingency Plans (C-Plans) are required by State of Alaska pollution prevention statutes and regulations, the TAPS lease and the federal grant. JPO federal agencies, including the USDOT/PHMSA, U.S. Coast Guard (USCG) and EPA, also require spill prevention and response plans. ADEC staff at the SPCO review and enforce compliance with C-Plans for TAPS and the VMT (see lease stipulation 2.14).

State C-Plans are required to have five parts:

1. Response Plan
2. Prevention Plan
3. Supplemental Information
4. Best Available Technology Analysis
5. Response Planning Standard Calculation

ADEC staff review each portion of a C-Plan for compliance with State of Alaska regulations in 18 AAC 75, Article 1 and Article 4. Once approved, C-Plans must be renewed every five years. The operator may submit proposed plan amendments during the five-year effective period for ADEC's review and approval. Oversight of C-Plan compliance includes reviewing the plan application, conducting and evaluating spill response exercises and conducting audits and inspections of plan specifications.

### **Contaminated Sites**

As mentioned in the Solid Waste Disposal section above, APSC continued in 2011 its ongoing effort to retire assets in facilities that are no longer required to support TAPS operations. The asset-retirement process triggered many questions related to historic spills and identified contaminated sites along TAPS, from construction to the present.

Discussion between ADEC and APSC regarding asset-retirement focus on the level of "cleanup" that the State requires before property is released from right-of-way commitments. The ADEC liaison to the SPCO continues to coordinate with the contaminated sites program to assist the SPCO and JPO in resolving TAPS contaminated sites concerns.

## Department of Fish and Game Liaison FY11 TAPS Activities

The ADF&G liaison conducted field inspections of the TAPS right-of-way with APSC representatives at various locations along the 800-mile pipeline, from the North Slope to Valdez. The ADF&G liaison visited pre- and post-project sites and prepared surveillance reports at a representative sample of the locations. The liaison discussed with APSC solutions for construction, maintenance and project timing to avoid or minimize impacts to fish resources and habitats.

The ADF&G liaison's surveillance activities revealed that, in an effort to ensure efficient fish passage, APSC baseline crews have been actively maintaining low-water crossings and culvert structures along the right-of-way in compliance with the conditions and stipulations of Fish Habitat Permit FH 09-SPO-0011 and FH 11-SPO-0007. The liaison completed 58 written surveillance reports in FY11 (see Appendix G: for a full list of reports).



**In May of 2011, ADF&G and APSC worked together to rescue an abandoned baby musk ox found between PS2 and PS3. Read the ADF&G press release at [www.adfg.alaska.gov](http://www.adfg.alaska.gov).**

### APSC Environmental Surveillances and Repairs

APSC conducted fish stream surveillances at 645 sites along TAPS. The APSC Right-of-Way and Civil Maintenance Group worked on 79 drainage structures in 2010. Two sites required extensive repair (and Fish Habitat Permits issued by the SPCO) to provide long-term fish passage and 77 sites required routine maintenance; the remaining 566 sites required no work.

### Fish Passage Improvement Projects

Beaver Dam Brook is located on the east side of the Dietrich River valley, approximately 45 miles north of Coldfoot and 42 miles south of PS4, where the river floodplain, pipeline and Dalton Highway run parallel. Soils in Beaver Dam Brook consist of gravel and sands overlain by a layer of silt.

At the Beaver Dam Brook, the Dietrich River is a wide braided gravel bed stream with multiple sub-channels across the width of the floodplain. The main channel of the Dietrich River migrated to the west, away from the former brook confluence at the edge of the pipeline right-of-way, resulting in a vertical barrier to fish passage. Another vertical barrier exists at the highway culvert on the opposite side of the pipeline right-of-way.

APSC restored fish passage by constructing a let-down structure that serves as a fishway between the Dietrich River and the highway culvert. APSC workers constructed the let-down structure using a rock base filled with imported gravel. APSC workers created a channel within the structure for fish passage. The channel included boulder clusters to provide diverse flows and dampen high velocities, thereby creating small pools for fish resting areas. The channel was field-fitted to match the elevations of the existing culvert on the highway-side of the pipeline and the river slough.

### **Fed Creek Low Water Crossing Repair**

Fed Creek is located at PLMP 325.25. APSC workers repaired the low-water crossing and adjacent channel to provide for fish passage and safe vehicle access. The repair work exceeded what was required by the annual line-wide low-water crossing maintenance permit.

### **Beaver Dam Removal**

In the past, APSC would submit multiple requests under the TAPS lease and grant for removal of nuisance beaver dams that threatened pipeline and right-of-way integrity and, in some cases, blocked fish passage. Authorizations issued by the JPO would include similar stipulations.

In FY11, the JPO issued on a one-year trial basis a line-wide authorization for beaver dam removal within the TAPS right-of-way. The authorization included several specific conditions, notifications and reporting requirements. The intent of the authorization was to allow for a faster response time to minimize potential damage and to discourage beavers from investing significant time and energy in areas adjacent to the work pad. After review of the 2011 beaver dam removal activities, the JPO will reevaluate this authorization to determine if it is appropriate to change the approach to beaver dam removal on a longer term basis.

## Department of Labor and Workforce Development FY11 TAPS Activities



**DOLWD safety liaison Ray Elleven conducted 34 safety inspections of TAPS facilities in FY11.**

### Safety Inspections

The SPCO safety liaison conducted 34 annual safety inspections of TAPS facilities for compliance with the health and safety requirements in Stipulation 1.20: Health and Safety. The TAPS facilities include the pump stations, response bases, a drag-reducing agent injection site at PLMP 238, the Fairbanks-area shops and storage facilities and the VMT. The safety liaison uses the Federal Occupational Safety and Health Administration (OSHA) standards (29 CFR 1910 and 29 CFR 1926) to develop and update inspection criteria.

In addition to annual inspections, the safety liaison conducted 20 work site inspections. The standard for a work site inspection is the same as annual inspections, but with more emphasis on safety programming and procedures.

- Pre-shutdown activities at PS1 & PS9
- Tank 190 clean-up activities
- Ammonia, load cell, & shoe realignment crew activities
- New Prospect Airport tower
- Pig lodged in PS5 discharge relief piping
- PLMP 238 fire suppression system installation
- Work site safety inspections at PS1, PS9 & PS 4
- Integrity investigations at PLMP 495, PLMP 517 & PLMP 592

The safety liaison identified 16 safety violations in FY11. The violations were minor in nature and were corrected immediately or soon after the inspections.

APSC injury rates are below the Bureau of Labor Statistics national average for North American Industry Classification System code 486, Pipeline Transportation. Injury rates are maintained by calendar year. The most recent statistics available at the time of reporting are from Dec. 31, 2009, when the national recordable injury rate for pipeline transportation was .80 injuries per 200,000 man-hours worked. APSC and its contractors had a combined recordable injury rate of 0.22 injuries per 200,000 man-hours worked in 2010 - during the first six months of 2011 the rate was .17 injuries per 200,000 man-hours worked.

APSC reports all recordable injuries (according to the Occupational Safety & Health Administration definition) to the SPCO safety liaison. In FY11, only one of the recordable injuries resulted in a lost work day.

**June 4, 2011:**

**Lost Time Injury at PS9**

On June 4, 2011, an APSC contractor employee used a high-pressure washer to clean Tank 190 at PS9. While using the pressure washer, the contractor employee passed the stream over his foot. The high-pressure stream cut through the employee's boot and lacerated the top of his foot. Due to the deep laceration and the exposure to the chemical wash, the employee underwent surgery to treat the wound. APSC recorded the incident as the first lost-time injury in more than ten million man-hours.

## Electrical Inspections

The SPCO electrical inspector tracks code violations, issues notices of violation and verifies corrections with follow-up inspections. The electrical inspector confirms that electricians and contractors are licensed and inspects electrical work during random on-site inspections to verify that the code requirements are met. The electrical inspector focuses on timely verification of code violation abatements.

In FY11, the SPCO electrical inspector performed 93 inspections, issued two notices of violation and reviewed 19 certificates of fitness. The electrical inspector also provides code interpretations and is the JPO engineering staff's code compliance consultant. A list of all FY11 inspection reports can be found in Appendix G.

### Line-wide inspections:

In 2011, the DOLWD electrical inspector documented work on the TAPS cathodic protection systems; APSC upgraded the existing system with the addition of several self contained, solar and wind-powered units. The electrical inspector also observed APSC work relating to security and communications upgrades, including the installation of badge-activated gates at PS3 and PS11.

### VMT Power Generation and Distribution Upgrades

APSC began work on VMT power generation and distribution upgrades (APSC project Z533) in early 2011, but later postponed the VMT upgrade project until July 2011. The SPCO electrical inspector reported that APSC's efforts to enhance maritime safety at Bligh Reef in Prince William Sound with improvements to its communications and navigational systems, APSC project Z616, are complete.



**DOLWD electrical inspector Dan O'Barr traveled to Bligh Reef in FY11 to observe APSC's efforts to enhance maritime safety in Prince William Sound.**

### PS1 Electrification and Automation Project

APSC restarted work on the PS1 electrification and automation project (APSC project S120) in May of 2011. The SPCO electrical inspector traveled to PS1 multiple times in 2011 to observe the progress on project S120 and document APSC's compliance with state and federal codes.

### PS3 & PS4 Black Start Generators and Fuel Gas Line Heater

The PS3 and PS4 Black Start generator installation (APSC project F605) is nearly complete. The SPCO electrical inspector reported that work on the PS3 fuel gas line heater, APSC project F730, is complete and the heater is functioning properly.

**PS2, PS8 and PS12:****Power Isolation and Weather Station Projects**

The APSC project to re-route power and isolate unused buildings at PS2 and PS8 is complete. In 2011, APSC began operating recently-installed weather stations at PS8 and PS12 to satisfy EPA and ADEC monitoring requirements. APSC plans to install weather stations at other TAPS pump stations in FY12.

**Department of Public Safety Fire Marshal FY11 TAPS Activities**

The State Fire Marshal's Office (SFMO) liaison conducted TAPS inspections in May and June of FY11. The inspections covered the entire length of the pipeline and included the Ship Escort/Response Vessel System (SERVS), Galbraith Airport, Prospect Airport, Fairbanks Response Base, North Pole Metering and Petro Star Metering facilities. The SFMO liaison inspected 279 buildings and identified 79 hazards for corrective action. The number of items requiring corrective action decreased significantly from the 2010 annual inspections.

**Plan Reviews**

APSC submitted 79 plan reviews for FY11, which included fire suppression systems for the permanent living quarters (PLQ) at PS4, PS5 and PS6.

**Significant Issues**

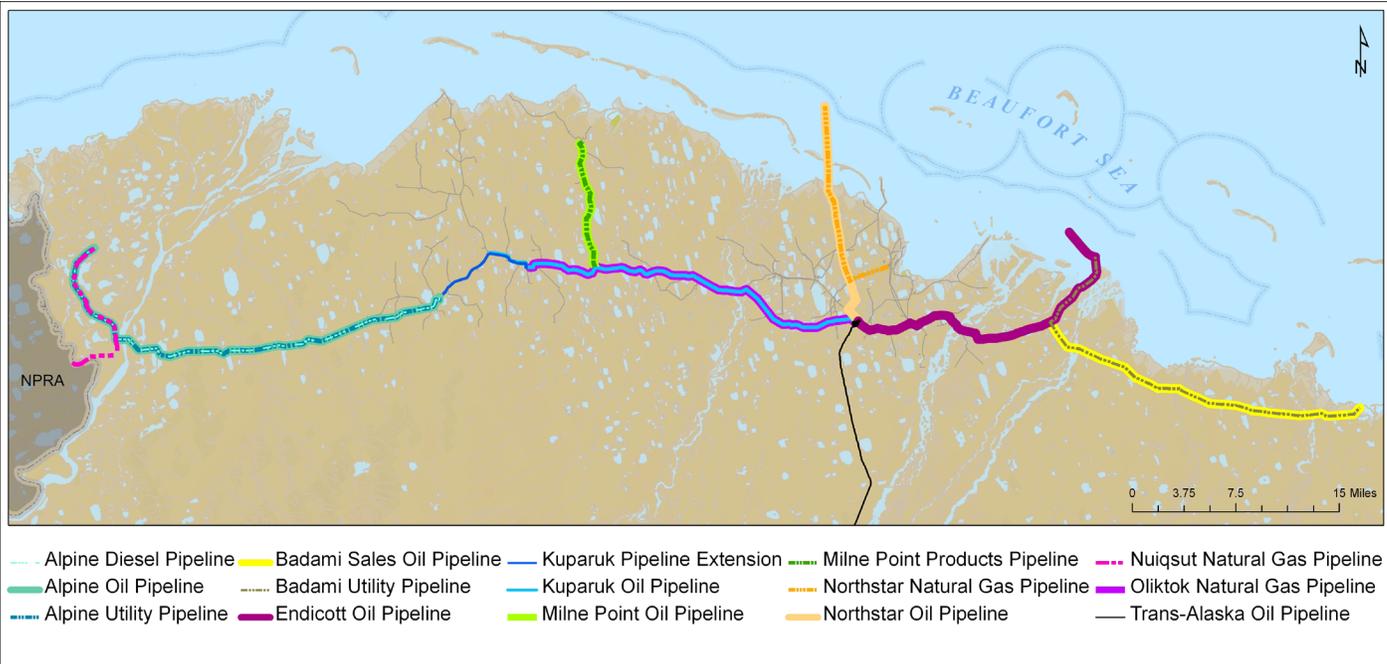
APSC completed the installation of the Marioff Fine Water Mist sprinkler system in the PS6 PLQ and is replacing the kitchen hood and duct systems for PS4, PS5 and PS6. APSC plans to install similar sprinkler systems at PS4 and PS5. The SFMO liaison will conduct mechanical and fire inspections on the sprinkler systems project.

APSC continues to work toward a resolution for a fire suppression system at the PS1 tank farm and has committed to completing the project by 2013. Two different system options are being considered for the PS1 tanks.

There were three Halon dumps this year, one at PS4, PS5 and PS7. No major fires were reported.

APSC removed all of the old CO<sub>2</sub> suppression systems in all of the telecommunication shelters and replaced them with much safer Novec Sapphire suppression systems. The fire alarm systems were also upgraded.

# North Slope Pipelines



This section of the SPCO annual report focuses on SPCO-jurisdictional pipelines on the North Slope of Alaska. The North Slope has seven existing pipelines and one proposed (see the Proposed Pipelines section of this report).

BP Exploration (Alaska) Inc. (BPXA) operates the Badami, Endicott, Milne Point and Northstar pipeline systems on the North Slope. The Badami system includes Badami oil and utility pipelines; the Milne Point system includes Milne Point oil and product pipelines. The Northstar system includes Northstar oil and gas pipelines.

ConocoPhillips Alaska, Inc. (CPAI), operates the Alpine, Kuparuk and Oliktok pipeline systems on the North Slope. The Alpine system is composed of the Alpine diesel, oil and utility pipelines. The Kuparuk system includes the original Kuparuk pipeline and Kuparuk extension.

North Slope Borough (NSB) operates Nuiqsut Natural Gas Pipeline (NNGP), which transports natural gas from the CPAI Alpine production pad to the village of Nuiqsut.

Each pipeline subsection includes an overview of the pipeline system and highlights from SPCO compliance, right-of-way and engineering activities during 2011.

## BP Transportation (Alaska), Inc. Pipelines

### Badami Pipelines



SPCO staff accompany BPXA personnel during a March 2011 walking speed survey.

**B**adami Sales Oil Pipeline connects the eastern-most development on the North Slope, Badami oil field, to Endicott Pipeline. The 12-inch Badami oil pipeline originates at Badami Central Production Facility (CPF). Badami CPF houses the pig launcher, mainline pumps and metering equipment for the pipelines. The pipeline terminates at the tie-in with Endicott Pipeline, approximately 25 miles west of Badami CPF. The Badami pipelines share vertical support members and, except at the Shaviovik, Kadleroshilik and Sagavanirktok river crossings, are above ground.

Badami Sales Oil Pipeline Right-of-Way Lease (ADL 415472) and Badami Utility Pipeline Right-of-Way Lease (ADL 415965) were approved by the DNR commissioner and issued on December 15, 1997. See Appendix D for acreage, survey and lease information.

The six-inch Badami utility pipeline originates at the “T” intersection on the Endicott causeway where it ties-into the fuel gas that travels from the Endicott main production island to the satellite drilling island.

The Badami utility pipeline was designed to transport fuel gas from the Endicott

tie-in to Badami CPF, a distance of 31 miles, to power Badami facilities. BPXA operated the Badami utility pipeline intermittently to supply fuel gas prior to and during start-up of Badami CPF. In 2007, BPXA also operated the utility pipeline briefly to supply gas needed to propel a pig through the Badami oil pipeline. Badami Utility Pipeline was restarted in August 2010 and is currently in operation. When Badami is producing oil it can also produce its own fuel gas to support facilities and field operations.

### **Badami Release of Interest Surveys**

The SPCO has met with BPTA to discuss the finalization of the Badami oil and utility construction rights-of-way and rights-of-way surveys. The Badami leases require the lessee to complete surveys prior to the release of the construction rights-of-way and implementation of the operation and maintenance rights-of-way. The Badami oil pipeline right-of-way record of survey (EPF 2008-09) was recorded during FY11.

The Badami utility pipeline right-of-way survey was sent to the lessee's surveyor for the final Mylar® copy of EPF 2008-06 in FY11. When the Mylar® copy has been approved by State survey staff, signed by the DNR Commissioner and properly recorded, the release of interest of utility right-of-way will be adjusted to the size and acreage for pipeline operations and maintenance.

On September 20, 2007, the SPCO approved the BPXA plan to discontinue operations of both the Badami oil and utility pipelines. Both Badami pipelines remained out of service until they were restarted in 2010.

### **Badami Oil Pipeline Start-up**

In late 2010, BPTA and BPXA worked to bring both the Badami production facility and oil pipeline back into service. The Badami restart effort primarily involved facility work; however, bringing the pipeline into service presented some challenges for the operator. BPXA performed in-line inspection (ILI), both inertial position and smart pigging, investigations prior to start-up to look for possible corrosion and any indication of pipe movement in the buried sections.

#### **July 2010: Pigging Difficulties**

In July, the first ILI pigging attempt ended prematurely when a smart pig became lodged in the Badami pipe. BPXA removed the stuck pig and later reinitiated the inspection by pigging the pipeline in a reverse direction to gather data on the previously unsurveyed section of pipe.

## **November 2010:**

### **Start-up**

BPXA backfilled the Badami oil pipeline with production fluid from Endicott and brought the oil pipeline into service on November 5, 2010. After BPXA shut down the Badami oil pipeline in 2007, the SPCO required that the operator provide a comprehensive plan for restarting the pipeline. BPXA submitted its restart plan to the SPCO and staff engineers performed a review prior to the start-up activities.

The SPCO observed pipe subsidence in the area surrounding the west Shaviovik crossing. There is a linear depression on the tundra, directly above the pipeline, in the area from the vertical transition to the riverbank.

BPXA performed an ILI survey in July of 2010; the survey results did not reveal any pipe movement in the area of the Shaviovik depression or any significant corrosion. The ILI data indicate that the depression does not affect the pipeline integrity.

## **SPCO FY11 Badami Pipelines Activities**

### **July 2010:**

#### **Document Review**

Due to ongoing North Slope survey efforts by the State and BPXA, Badami pipelines have been operating with the construction right-of-way width. To prepare for the relinquishment of the construction right-of-way and transition to the operations width, SPCO compliance staff reviewed BPXA, State Historic Preservation Office and ADEC documents. SPCO analyzed data in spill reports, surveillance and monitoring records and archaeological studies and found that the lessee was operating within lease requirements (SPCO letter 10-454-AS). SPCO ROW staff report that the survey project is near completion and the Badami pipelines right-of-way will convert to an operations width in FY12 (see the Badami background information above for more details).

### **July 2010:**

#### **Hot Tap Procedure**

In July of 2010, SPCO compliance staff observed BPXA contractors conduct a hot tap procedure on the Badami sales oil pipeline. The hot tap work was in preparation for corrosion coupon and electrical-resistance (ER) probe installations, to take place at a later date. Corrosion coupons and ER probes are used to monitor internal corrosion in pipelines - corrosion coupon testing is an assessment tool utilized to investigate the internal conditions of the pipeline and assess the effectiveness of the mitigation measures in place.

SPCO compliance staff was on-site to evaluate the contractor's performance and document the Badami sales oil pipeline right-of-way conditions. SPCO reported that all efforts related to the coupon work were satisfactory. The contractor set up one coupon and ER probe for installation according to established hot tap procedure guidelines. In response to a contractor who was on-site but not involved in the hot tap procedure and was not wearing proper PPE in the field, SPCO issued one minor unsatisfactory surveillance. The Badami pipeline quality assurance program and the associated right-of-way lease require the use of proper PPE (SPCO letter 10-394-AS).

### **August 2010: Site Inspections**

SPCO compliance staff conducted a visual inspection of the Badami sales oil and utility pipelines rights-of-way to assist the SPCO ROW section in preparing a release of interest. The SPCO evaluation of the Badami rights-of-way conditions resulted in a satisfactory determination.

SPCO compliance staff inspected the Badami Weir to document site conditions. Rehabilitation activities performed during the summer of 2009 included spreading overburden (a term to describe soil and ancillary material above the permafrost), fertilizing, seeding with native vegetation and placing organic erosion control matting over the seeded areas. A site visit on August 18, 2010, confirmed that the 2009 planting had been successful and that the site was in acceptable condition.

The wetlands adjacent to the Badami rights-of-way also appeared healthy. The main intent of the Badami weir structure is to stabilize the drainage of the local area and preserve the wetlands. There was also no sign of river channel obstruction (SPCO letter 10-454-AS). Portions of the river bank had been fortified with erosion control matting and large rock. The operator will continue to maintain the site according to the provisions of the Department of the Army Permit No. 2-940700 and Fish Habitat Permit FG95-III-0142 Amendment #3.

### **July, August & September 2010 River Crossings Inspection**

The Badami pipeline route crosses three major rivers and eight streams. The pipe is buried under the three major rivers. SPCO compliance staff accompanied BPXA representatives on their visual inspections of the Badami pipelines river crossings during three separate field visits during the summer of 2010. The SPCO evaluation resulted in satisfactory determinations.

During the summer inspections, SPCO compliance staff documented surface changes on the east side of the Shaviovik River, in the area extending from the riser pad west to the shoreline that had been trenched during pipeline construction (SPCO letter 10-457-AS). The surface changes were discussed with SPCO engineers who evaluated them in light of ILI pigging data and other relevant information and concurred with BPTA's conclusion that the buried pipe has not moved measurably.

**March 2011:**

**Walking Speed Survey**

In March of 2011, SPCO compliance staff traveled to the North Slope to observe the annual Badami pipelines walking speed survey (WSS). The WSS is a component of the BPXA surveillance and monitoring program. SPCO compliance staff documented the right-of-way conditions and evaluated contractor performance during the Badami pipelines WSS. SPCO recorded satisfactory observations for the field visit because the WSS satisfied the surveillance and monitoring program commitments.



**BPXA typically conducts annual ground inspections in March or April, when snow still covers the pipeline.**

BPXA typically conducts annual ground inspections in March or April, when there is snow covering portions of the Badami pipeline system so not everything on the WSS checklist can be properly inspected. BPTA recognizes this concern and is in the process of planning for inspections of some items during snow-free periods. The SPCO approved the latest version of the BPTA surveillance and monitoring program

(SPCO letter 11-139-AS).

**March 2011:**

**Annual Report Review**

The Badami right-of-way leases require the operator to submit a written analysis of pipeline operations and maintenance activities and a summary of surveillance and monitoring efforts from the previous calendar year. On March 1, 2011, BPXA submitted its 2010 Annual ADNR Surveillance and Monitoring Report for the Badami Pipelines. SPCO evaluated the report for compliance with lease requirements of Stipulation 1.6 and annual reporting requirements. Upon review, SPCO determined that all requirements were met (SPCO letter 11-045-AS). See the Lessee Annual Reports section of this report for a summary of the BPXA report.

**May 2011:**

**State Fire Marshal Annual Inspection**

The SFMO liaison conducted the annual inspection of the Badami pipelines and related facilities on May 3, 2011. A total of 17 facilities were inspected and eight violations were reported. There were no hazards noted in the process areas; the violations occurred in the living quarters, process and office areas and were corrected soon after the notice of violation was issued.

## Endicott Pipeline



**BPTA contractors install shims to protect the pipelines from movement prior to a hot tap procedure for coupon and probe installation.**

**E**ndicott oil field development is located on offshore state land approximately 10 miles northeast of Prudhoe Bay. BPXA, the Endicott Pipeline operator, describes Endicott as the first continuously producing offshore oil field in the Arctic.

Endicott facilities are situated on man-made gravel islands, called the main production island (MPI), the satellite drilling island (SDI) and Endeavor Island, a small island that abuts the MPI. Endicott lies north of Sagavanirktok River Delta about 15 miles east of Prudhoe Bay and inside the barrier islands in the Beaufort Sea. The Endicott islands are linked to shore by a 1.5-mile causeway, with a road and above-ground pipeline support from the inter-island causeway that links MPI and SDI to the Sagavanirktok River Delta uplands. An eight-mile gravel road extends from the end of the causeway to the Prudhoe Bay road system. The causeway system provides year-round access to the Endicott pipeline and facilities.

Endicott Pipeline transports processed crude oil from the Endicott oil field development and the Badami oilfield to the Trans-Alaska Pipeline System PS1. The 16-inch diameter Endicott pipeline originates at Module 303 on MPI, is mounted on vertical support members along the main causeway and parallels the onshore road system until it terminates at PS1 where there is a pig receiver and metering

equipment. The Badami sales oil pipeline connects to the Endicott pipeline at the approximate mid-point of Endicott Pipeline. Badami oil is co-mingled with Endicott oil for delivery to PS1. See Appendix F of this report for more information on the physical characteristics of Endicott Pipeline.

The operational right-of-way for Endicott Pipeline is 150-feet wide, except along the causeway, where the right-of-way width is 500 feet (see Appendix D for acreage, survey and lease information). In early 2010, BPXA commissioned a survey of the Endicott area to obtain more-accurate acreage information. DNR approved the updated survey information and executed a minor lease amendment on January 25, 2010.

## SPCO FY11 Endicott Pipeline Activities

### August 2010:

#### Pipeline Cribbing Inspection

BPXA notified the SPCO in July of 2010 that two BPXA-operated pipelines, the 32-inch diameter seawater treatment plant pipeline to Flow Station 2 and the 24-inch diameter gas pipeline to Flow Station 2, were in contact with Endicott Pipeline.

BPXA personnel had assessed the situation and, pending the design and implementation of new vertical support members, installed cribbing at specific locations along the right-of-way to prevent the two pipelines from settling on Endicott Pipeline.

In August, SPCO compliance staff inspected the cribbing under the Endicott Pipeline. An SPCO compliance specialist confirmed that the cribbing was an effective short-term solution to the pipeline settling issue (SPCO letter 10-377-AS).



**Close-up view of pipeline resting on Endicott Pipeline**

### December 2010:

#### State Fire Marshal Annual Inspection

The SFMO liaison conducted the annual inspection of Endicott Pipeline and related facilities on December 15 and 16, 2010. A total of 20 facilities were inspected, including the Base Operations Center and process facilities. Nine violations were noted and have been corrected. The facility had few hazards and required only minor corrective action.

### **March 2011:**

#### **Annual Report Review**

The Endicott Right-of-Way Lease (ADL 410562) requires the operator to submit a written analysis of pipeline operations and maintenance activities and a summary of surveillance and monitoring efforts from the previous calendar year. On March 1, 2011, BPXA submitted its 2010 Annual ADNR Surveillance and Monitoring Report for Endicott Pipeline. Upon review, SPCO determined that all requirements of Stipulation 1.6 and SPCO annual reporting requirements were met (SPCO letter 11-045-AS). See the Lessee Annual Reports section of this report for a summary of the BPXA report.

### **September 2011:**

#### **Coupon Extraction and Installation**

A BPXA contractor installed corrosion coupons and an ER probe in Endicott Pipeline in June of 2010 (SPCO letter 10-349-AS). The following September, SPCO compliance staff traveled to Endicott Pipeline to observe the coupon extraction and replacement procedures and evaluate the contractor's performance with respect to right-of-lease stipulations.

The BPXA contractor conducted a preliminary risk assessment and followed with an on-site review of the potential hazards involved with the coupon extraction and installation procedures. All the contractor's employees at the work site had an appropriate level of knowledge and training to perform the work. Each person wore the required PPE and was prepared to carry out emergency response plans. At no time during the inspection did the SPCO compliance representative observe the contractor divert from policies and procedures required for safe work during the coupon extraction and replacement procedures (SPCO letter 11-009-AS).

The BPXA contractor extracted the three corrosion coupons from the June installation and replaced each with a new coupon. BPXA will send the coupons to a lab for testing; data gathered from the coupons will be analyzed and used to determine the mitigation measures necessary to maintain pipeline integrity. USDOT/PHMSA regulates the corrosion inspection program for Endicott Pipeline.

## Milne Point Pipelines



**The Milne Point products (left) and oil (right) pipelines**

**M**ilne Point oil pipeline construction began in 1984 and was completed the following year. The 14-inch diameter pipeline was designed to transport processed crude oil from Milne Point Unit, operated by BPXA, to Kuparuk Pipeline, operated by CPAI. Milne Point Pipeline originates at Milne Point Central Facilities Pad (CFP) Module 58, passes below Spine Road east of Central Processing Facility One (CPF-1) and terminates at the Kuparuk Pipeline connection near Module 68. Module 68 houses metering instruments, leak detection equipment and a pig receiver. In 2007, BPXA removed a section of Milne Point Pipeline inaccessible to pigging tools and replaced it with corrosion-resistant duplex stainless steel.

The Milne Point products pipeline was built in 2000 and placed on Milne Point Pipeline supports. The eight-inch pipeline transported natural gas liquids from Oliktok Pipeline to the Milne Point CFP for use in enhanced oil recovery processes. BPXA shut down the Milne Point products pipeline in 2002 and, in December of 2006, purged and physically disconnected it from Oliktok Pipeline, in compliance with SPCO and USDOT/PHMSA regulations.

Like the Badami pipeline system, the Milne Point Pipeline right-of-way has retained its original construction width of 150 feet, pending ongoing North Slope survey work. BPTA has submitted an as-built survey to the State to initiate the release of interest process for the Milne Point products pipeline; the right-of-way lease will remain in effect until formally terminated.

In FY11, the Milne Point products pipeline right-of-way survey drawings (EPF 2007-57) were approved by DNR and sent for recording. The survey information will be used to complete the release of interests of the construction right-of-way to the acreage specified for pipeline operations and maintenance. Additional Milne Point lease information is available in Appendix D and from the SPCO website.

## SPCO FY11 Milne Point Pipelines Activities

### August 2010:

#### Document Review

SPCO conducted a document review in preparation for issuing a release of interest for Milne Point Pipeline anticipated in 2012. The operation and maintenance ROW width will be 150 feet. Actual operation and maintenance width is determined by survey EPF 2007-0057. The SPCO review of the Milne Point Pipeline documents for relinquishment of the construction ROW acreage resulted in a satisfactory determination.

### August 2010:

#### Right-of-Way Inspection

A member of the SPCO compliance staff conducted a visual inspection of the Milne Point pipelines rights-of-way to support the SPCO ROW section efforts to prepare a release of interest (see related information above). The SPCO evaluation of the Milne Point rights-of-way conditions resulted in a satisfactory determination (SPCO letter 10-520-AS).

On the same trip, the SPCO compliance staff inspected the Milne Point pipelines rights-of-way for compliance with lease requirements and program commitments. The inspection initially resulted in several minor unsatisfactory observations involving what the observer considered to be erosion at two cased crossings, debris observed in some culverts and an issue related to broken centralizers.



**Broken casing spacer at pipeline crossing  
outside Module 58**

Upon investigation by the SPCO and ADF&G, a site visit by an SPCO engineer and the professional opinions of two SPCO engineers who also reviewed additional information provided by the lessee, most of the unsatisfactory findings were changed to satisfactory. One exception related to an observation that the lessee could not provide evidence that all items in the surveillance and monitoring program, walking and driving surveillances were being performed due to snow cover. This issue was consolidated into a single surveillance, 10-SPCO-186, which the lessee is addressing.

Discussions on these surveillances evidenced another issue, regarding the function of centralizers on pipelines that do not have cathodic protection systems. This issue does not involve the existing integrity of the Milne pipelines. There were two broken centralizers on the operating oil pipeline. Both still perform their primary function and were adjacent to redundant centralizers that were in good condition. BP and the SPCO disagree on the function of the centralizers. The SPCO believes that the pipelines should be electrically isolated from the casings. To bring closure to the issue, the office provided an opinion to USDOT/PHMSA for use on future pipeline inspections.

**March 2011:**

**Annual Report Review**

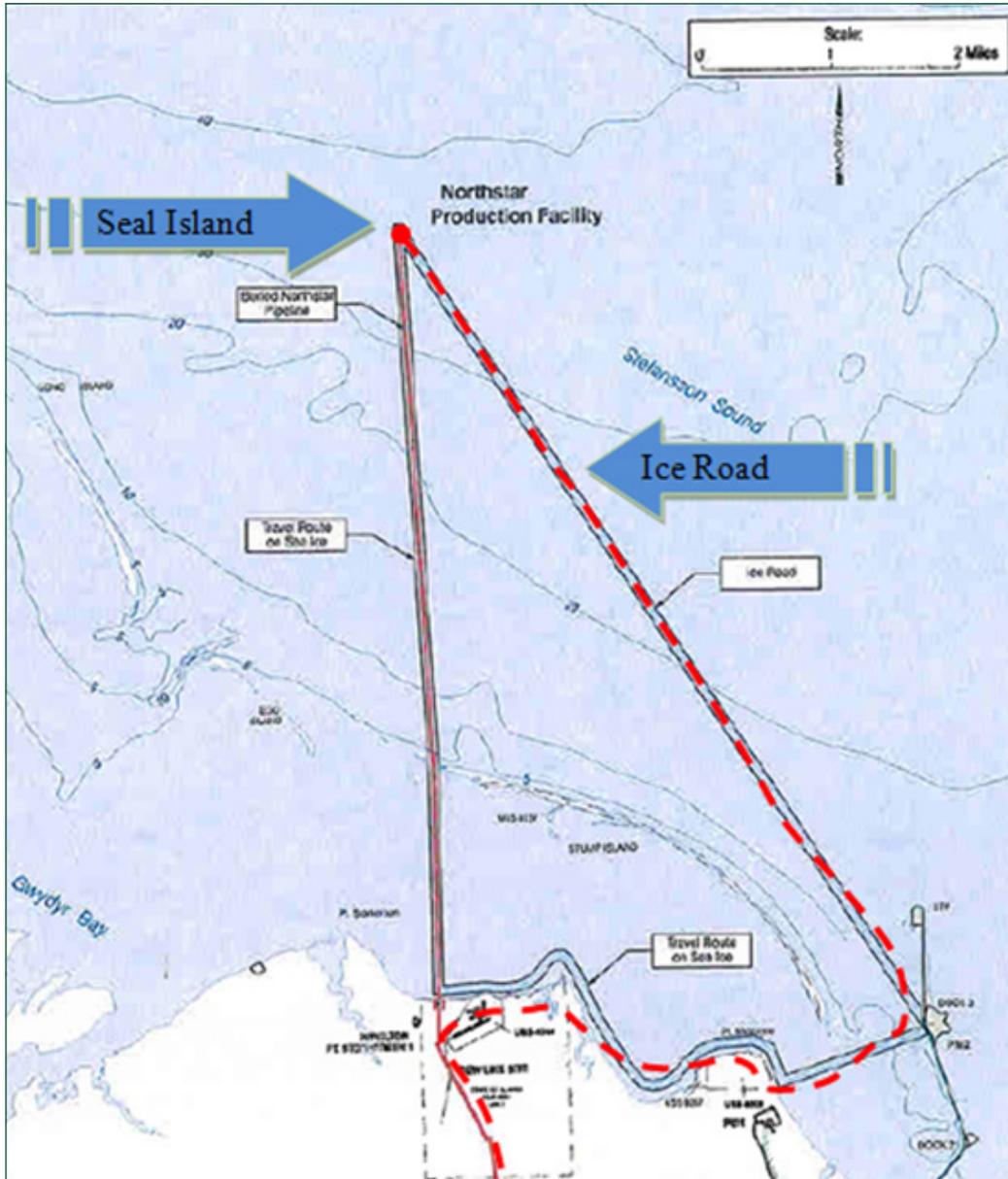
The Milne Point Oil Pipeline Right-of-Way Lease (ADL 410221) requires the operator to submit a written analysis of pipeline operations and maintenance activities as well as a summary of surveillance and monitoring efforts from the previous calendar year. On March 1, 2011, BPXA submitted its 2010 Annual ADNR Surveillance and Monitoring Report for Milne Point Pipeline. SPCO evaluated the report for adherence to lease requirements of Stipulation 1.6 and SPCO annual reporting requirements. The SPCO determined that all requirements were met (SPCO letter 11-045-AS). See the Lessee Annual Reports section of this report for a summary of the BPXA report.

**April 2011:**

**State Fire Marshal Annual Inspection**

The SFMO liaison completed the annual inspection of the Milne Point pipelines and related facilities on April 4 and 5, 2011. Thirty facilities were inspected, including the Milne Point Unit living quarters, and 10 violations were documented and subsequently corrected. The number of violations decreased significantly since last year's inspection.

## Northstar Pipelines



Representation of the FY11 Northstar Pipelines walking speed survey path

**N**orthstar oil field is located about six miles off the Alaska coast in the Beaufort Sea. Royal Dutch Shell discovered the reservoir in 1983 with exploration wells drilled from Seal Island (also known as Northstar Island), where the Northstar production facilities are positioned today.

BPXA acquired most of the Northstar leases and began efforts to develop the field in 1995. DNR issued a pipeline right-of-way lease in October of 1999; BPXA began producing oil from Northstar in late 2001.

The Northstar oil pipeline transports processed crude oil from the Northstar facilities to Trans-Alaska Pipeline System PS1. A second pipeline transports natural gas, used to maintain reservoir pressure, from the Prudhoe Bay central compressor plant to Northstar Island. The two pipelines share vertical support members for their above-ground sections and a subsea trench for the offshore portion.

The trenched pipes were designed and constructed to withstand seabed ice gouge and settlement loading conditions of thawed soils. In addition to standard leak detection systems that monitor pressure, volume and temperature in the pipeline, the operator employs a leak detection system called LEOS (Leak Detection and Location System),

which is designed to sense hydrocarbon vapors surrounding the pipelines. USDOT/PHMSA regulates the Northstar pipelines' corrosion inspection programs. See Appendix F for more information on the physical characteristics of the Northstar pipelines.

## SPCO FY11 Northstar Pipelines Activities

### July 2010:

#### Corrosion Coupon and ER Probe Installation

In July of 2010, BPXA contractors installed a flush-mounted corrosion coupon and ER probe in a section of the Northstar oil pipeline near PS1. SPCO compliance staff arrived soon after the procedure was completed and, based on a review of the unit work permit, safety hazard analysis and discussions with BPXA and contractor employees at the work site, documented the results of the hot tap work.

BPXA's quality assurance program, a requirement of the right-of-way lease, requires contractors to adhere to all elements of the 2010 BP Team Alaska Safety Handbook and the conditions of the unit work permit. During the July post-procedure inspection, SPCO compliance staff noted that a contractor at the work site did not wear the proper eye protection. The contractor's failure to follow established safety protocol resulted in an unsatisfactory surveillance (SPCO letter 10-394-AS). BP took immediate action to address the matter in accordance with its corporate policies.



**Workers use a specialized tool to perform a hot tap procedure on the Northstar oil pipeline.**

### September 2010:

#### Coupon Extraction and Installation

SPCO compliance staff traveled to the Northstar pipelines in September to observe the procedure to extract corrosion coupons installed in July (see previous paragraph) and document the contractor's adherence to right-of-way lease stipulations.

SPCO compliance staff verified that the work crew had the necessary authorizations and specialized qualifications to conduct the hot tap work on the Northstar oil pipeline. The BPXA contractor conducted a preliminary risk assessment and followed with an on-site review of the potential hazards involved with the coupon extraction procedure. All the contractor's employees at the work site had an appropriate level of knowledge and training to perform the work. Each person wore the required PPE

and was prepared to carry out the emergency response plans. At no time during the inspection did the SPCO compliance representative observe the contractor divert from policies and procedures required for safe work during the coupon extraction procedure (SPCO letter 10-394-AS).

**March 2011:**

**Walking Speed Survey**

In March of 2011, SPCO compliance staff traveled to the North Slope to observe the annual Northstar pipelines WSS. The WSS is a component of the BPXA surveillance and monitoring program. WSS inspection criteria consider risks to the environment and the health and safety of employees, contractors and the general public. SPCO compliance staff documented the right-of-way conditions and evaluated the contractor's performance during the Northstar pipelines WSS.

Prior to initiating the WSS, BPXA and the contractor's employees reviewed with a SPCO compliance specialist the authorization to proceed, task hazard assessment and unit work permit documentation. The purpose of the pre-work procedures is to provide for clear communication regarding activity-specific safety requirements.

SPCO compliance staff traveled by Tucker Sno-Cat<sup>®</sup>, a tracked vehicle designed for snow conditions, with the WSS crew by ice road from Northstar Island to Point Storkersen and then to E Pad (see map on page 69). Observations made by the SPCO during the WSS determined that BPXA and its contractor satisfied all lease requirements and reported satisfactory findings from the surveillance inspection (SPCO letter 11-133-AS).

**May 2011:**

**State Fire Marshal Annual Inspection**

The SFMO liaison's annual inspection of the North Star pipelines and related facilities was conducted on May 3, 2011. Twenty facilities were inspected and 22 violations were documented and subsequently corrected.

## **BPXA Pipelines: 2011-2012 Forecast**

SPCO compliance staff will focus primarily on section 2.0 lease requirements during the fourth quarter of FY11 and throughout FY12. Section 2.0 of DNR right-of-way lease agreements addresses environmental protection mechanisms to ensure Alaska's natural resources are protected.

SPCO management and compliance staff will continue to meet quarterly with BPXA representatives to keep up-to-date on significant activities, changes in staffing, progress of projects and other important information.

## ConocoPhillips Alaska, Inc. Pipelines

### Alpine Pipelines



**A pipeline inspector clears snow from a horizontal support beam to visually inspect the Alpine oil (left), utility (center) and diesel (right) pipelines.**

**A**lpine pipelines, each approximately 34 miles long and operated by CPAI, connect the western-most development on the North Slope to infrastructure in the Kuparuk River Unit (KRU).

The 14-inch Alpine oil pipeline transports processed crude oil from the Alpine Central Facility (ACF) to CPAI's Central Processing Facility Two (CPF-2). The Alpine diesel pipeline transports heating fuel and other petroleum products from CPF-2 to ACF. The Alpine utility pipeline transports treated seawater, used in enhanced oil recovery operations, from CPF-2 to ACF. All three pipelines are mostly above-ground; see Appendix F for detailed physical characteristics of the Alpine pipelines.

Although the Alpine utility pipeline does not transport petroleum products and therefore is not subject to the provisions of the Right-of-Way Leasing Act, the SPCO was delegated jurisdiction by the DNR Division of Mining, Land and Water and

subsequently issued the Alpine Utility Pipeline Right-of-Way Grant (ADL 415857) according to the provisions of Alaska Statute 38.05, the Alaska Land Act. See Appendix D for Alpine pipelines lease information.

## **SPCO FY11 Alpine Pipelines Activities**

### **November 2010:**

#### **Right-of-Way Inspection**

SPCO compliance staff traveled to the North Slope to observe the lessee's annual ground inspection of the Alpine pipelines right-of-way. The inspection is designed to assess the integrity of the pipeline and satisfy surveillance and monitoring program commitments. During the inspection, the lessee documents right-of-way conditions and considers potential risks to the environment and the health and safety of employees, contractors and general public.

SPCO compliance staff evaluated the contractor's performance and documented the Alpine right-of-way conditions. All observations yielded satisfactory results (SPCO letter 11-019-AS).

### **January 2011:**

#### **State Fire Marshal Annual Inspection**

The SFMO liaison's annual inspections of the Alpine pipelines and related facilities were conducted on January 17 and 18, 2011. The inspections covered process and production areas, living quarters and support facilities. The SFMO liaison documented 19 violations, three of which were in the process area. All violations were corrected. The inspections were conducted with the cooperation of the ConocoPhillips Fire Marshal Liaison and Alpine operations personnel.

### **February 2011:**

#### **Annual Report Review**

The Alpine pipelines' right-of-way leases require the operator to submit written analyses of pipeline operations and maintenance activities and a summary of surveillance and monitoring efforts from the previous calendar year. On January 15, 2011, CPAI submitted its 2010 Annual Comprehensive Report on Pipeline Activities for the Alpine oil, diesel and utility pipelines. SPCO evaluated the report to the lease requirements of Stipulation 1.6 and annual reporting requirements. Upon review, SPCO determined that all requirements were met (SPCO letter 04-017-WW). See the Lessee Annual Reports section of this report for a summary of the CPAI report.

## Kuparuk Pipelines



**A contractor inspects Kuparuk Pipeline for pipe wall metal loss using an ultrasonic test unit.**

The Kuparuk oil field, discovered by Sinclair Oil in 1969, is the second-largest oil field on the North Slope. Representatives of the DNR and Kuparuk Pipeline Co. signed a right-of-way lease agreement for Kuparuk Pipeline (KPL) in September of 1980.

The original 16-inch KPL, constructed in 1981, carried processed crude oil to PS1. Kuparuk Pipeline Extension (KPE) was later constructed to connect CPF-2 to CPF-1, and comprised both 12-inch and 18-inch segments.

In 1984, when the new 24-inch KPL was constructed, the original pipeline was converted to Oliktok Pipeline, which carries natural gas liquids from PS1 to CPF-1. In 2009 a 12-inch segment of KPE was replaced with 18-inch pipe, which made that portion of the pipeline accessible to pigging tools. Physical characteristics of the pipeline, including diameter and product transported, are provided in Appendix F.

## SPCO FY11 Kuparuk Pipelines Activities

### October 2010:

#### State Fire Marshal Annual Inspection - KPL

The SFMO liaison conducted annual inspections of KPL and related facilities on October 24, 25 and 26, 2010. The facilities inspected were CPF-1, CPF-2, Kuparuk Construction Camp, A/B Warehouse and miscellaneous drill sites. Nineteen hazards were noted. The SFMO liaison reported that many of the violations were minor in nature, and in most cases the hazards were corrected on the spot.



**Pipeline operators can use data from a corrosion coupon (pictured above) to identify pipeline locations that are susceptible to corrosion.**

### November 2010:

#### Coupon Extraction and Installation

SPCO compliance staff traveled to the North Slope to observe CPAI's contractor conduct hot tap procedures on KPE and KPL. The contractor was tasked with installing a corrosion coupon in KPE and extracting a coupon from KPL.

SPCO compliance staff evaluated the contractor's performance and documented the right-of-way conditions. A SPCO representative observed the process used for collecting and analyzing corrosion coupon test data. Pipeline operators use data extracted

from the coupons to locate areas susceptible to internal corrosion. The coupon information assists corrosion specialists in fine-tuning the corrosion protection program to ensure the pipeline integrity. The SPCO representative verified that the operated in accordance with all program commitments (SPCO letter 11-002-AS).

### January 2011:

#### State Fire Marshal Annual Inspection - KPE

The SFMO liaison conducted the annual inspection of KPE and related facilities on January 19 and 20, 2011. A total of 48 violations and subsequent corrections were noted.

### February 2011:

#### Annual Report Review

The KPL and KPE right-of-way leases require the operator to submit written analyses of pipeline operations and maintenance activities and a summary of surveillance and monitoring efforts from the previous calendar year. On January 15, 2011, CPAI submitted its 2010 Annual Comprehensive Report on Pipeline Activities for the Kuparuk pipelines. An SPCO evaluation confirmed that the report met the

requirements in lease stipulation 1.6 as well as SPCO annual reporting requirements (SPCO letter 99-160-GS). See the Lessee Annual Reports section of this report for a summary of the CPAI report.

**March 2011:**

**Driving and FLIR Surveillances of KPL and KPE**

In March of 2011, SPCO compliance staff observed the lessee's contractor conduct driving and aerial surveillances of the KPL and KPE rights-of-way. The contractor employed Forward Looking Infrared (FLIR), a thermal imaging system, attached to a fixed-wing aircraft to conduct the aerial surveillance.

Pipeline system surveillance is a component of the lessee's surveillance and monitoring program, a requirement of the right-of-way lease. Right-of-way inspections are designed to assess the integrity of the pipeline and identify potential risks to the environment, employees, contractors and the general public. SPCO compliance staff evaluated the contractor's performance and reported satisfactory results (SPCO letter 11-172-AS).

**April 2011:**

**KPL In-line Inspection**

SPCO compliance staff traveled to the North Slope to witness the ILI of Kuparuk Pipeline. While at the job site, SPCO staff verified the contractor's compliance with surveillance and monitoring and quality assurance program commitments. Adherence to the policies and procedures in the two programs is a requirement of the Kuparuk right-of-way lease.

The CPAI contractor employed a magnetic flux leakage (MLF) ILI tool to assess internal and external conditions of KPL. The ILI tool utilizes magnets that saturate the pipe material with a magnetic field. A specialist notes changes in the field and can identify and characterize dents, wrinkles, corrosion, mechanical damage or cracks in the pipeline. Repair recommendations and mitigation measures are developed based on the results of data collected by the ILI tool.

The SPCO evaluation of the contractor's performance yielded satisfactory results (SPCO letter 11-171-AS).



**A contractor inspects the magnetic flux leakage tool used to internally inspect Kuparuk Pipeline.**

## Oliktok Pipeline

Oliktok Pipeline (OPL) originates near the BP-operated Skid 50, adjacent to TAPS PS1. OPL transports natural gas liquids 28 miles to support enhanced oil recovery operations at Kuparuk CPF-1. KPL and OPL share horizontal and vertical supports. Oliktok Pipeline Co. is the lessee for OPL; CPAI operates the pipeline.

CPAI conducted five OPL maintenance pigging runs from Sept. 15 - 20, 2010. CPAI installed three filter banks to handle sediment deposits that might have collected in the pipeline since the last pig run and keep the downstream natural gas liquids facility operating. Sediment filled the first bank and partially filled the second bank; the third bank remained clean throughout the pigging runs. OPL has transported natural gas liquids, considered to be a “clean” service, for more than 14 years, which may explain the minimal build-up of solids in the pipeline.

CPAI conducted an ILI of OPL on September 24 and 25, 2010. The inspection achieved approximately 99% coverage, which is higher than the industry average, and showed no imminent integrity threats to the pipeline. The operator discovered some external corrosion near the weld packs.

OPL transported various products since it was first constructed as Kuparuk Pipeline. CPAI is preparing to convert the service again, this time to natural gas. The lessee plans to ship gas to Kuparuk to supplement its well injection and gas lift demands. A detailed letter from the SPCO to Oliktok Pipeline Co. outlined the administrative process, timeline and requirements for authorization of a change of service.

The SPCO and lessee agreed to use the KPE design basis as a format for the technical review of the pipeline conversion. CPAI produced a draft design basis that the SPCO reviewed, with only a few requested changes. The design basis is still in development.

## SPCO FY11 Oliktok Pipeline Activities

### **October 2010:**

#### **State Fire Marshal Annual Inspection**

The SFMO liaison conducted the annual inspection of OPL and related facilities on October 25 and 26, 2010. The facilities inspected included the Seawater Treatment Plant and CPF-3. A total of seven hazards were noted and addressed appropriately.

### **November 2010:**

#### **Annual Report Review**

The OPL right-of-way lease requires the operator to submit a written analysis of pipeline operations and maintenance activities and a summary of surveillance and monitoring efforts from the previous calendar year. On January 15, 2011,

CPAI submitted its 2010 Annual Comprehensive Report on Pipeline Activities for Oliktok Pipeline. SPCO evaluated the report for adherence to the requirements of lease stipulation 1.6 and SPCO annual reporting requirements. Upon review, SPCO determined that all requirements were met (SPCO letter 99-163-GS). See the Lessee Annual Reports section of this report for a summary of the CPAI report.

**November 2010:**

**Corrosion Coupon Testing**

SPCO compliance staff observed the evaluation of a corrosion test coupon extracted from OPL. The OPL surveillance and monitoring program, approved by the SPCO on March 20, 2008, outlines the CPAI procedures for administering a preventative maintenance plan. Preventative measures include a corrosion monitoring program using corrosion coupons installed at the inlet and outlet of OPL. Coupons are generally extracted and analyzed within six months of installation. In November of 2010, a CPAI contractor collected coupon data and recorded and stored the information according to procedures of the corrosion monitoring program.

The SPCO evaluation of the contractor's performance under lease requirements yielded satisfactory results (SPCO letter 11-002-AS).

**March 2011:**

**Driving and FLIR Surveillances of KPL and KPE**

In March of 2011, SPCO compliance staff observed the lessee's contractor conduct both driving and aerial surveillances of the OPL right-of-way. The contractor employed FLIR, a thermal imaging system, attached to a fixed-wing aircraft during the aerial surveillance.

Pipeline system surveillance is a component of the lessee's surveillance and monitoring program, a requirement of the right-of-way lease. Right-of-way inspections are designed to assess the integrity of the pipeline and identify potential risks to the environment, employees, contractors and the general public. SPCO compliance staff evaluated the contractor's performance and documented the right-of-way conditions and reported satisfactory results (SPCO letter 11-172-AS).

## CPAI Pipelines: 2011-2012 Forecast

### **Alpine Colville River Bank Erosion Survey**

The Alpine Pipeline operator will continue to monitor the Colville River crossing in 2012. Monitoring efforts, performed in accordance with the surveillance and monitoring program and right-of-way lease commitments, include surveying for bank erosion at the Colville River horizontal directional drilling (HDD) location.

### **Kuparuk Corrosion-under-insulation (CUI) Inspection**

The KPL and KPE CUI inspection by automated tangential radiography has been discontinued; inspections are now performed by ILI on the piggable portions of the line. While there are no planned CUI inspections (via radiography) on the piggable portions, there will likely be additional inspections after the final ILI data is reviewed. The SPCO expects to receive the ILI report by the end of June. The non-piggable sections of KPL and KPE had CUI inspections in 2009 and 2010, respectively, and are scheduled on three-year intervals (due again in 2012 and 2013).

### **KPE Maintenance and Cleaning**

Preventative pipeline maintenance is part of the KPE corrosion control program and is regulated by USDOT/PHMSA.

### **KPE Cased Road-crossing Inspections**

Eleven circuits are to be cleaned and visually inspected on KPE. This work order is released in July, and the visual inspections are typically performed shortly thereafter.

### **Oliktok River Crossing Inspections**

Each September and October, the OPL operator inspects the surrounding floodplains. SPCO compliance staff will observe the floodplains inspections and verify compliance with lease program requirements and commitments.

### **Quarterly Meetings**

SPCO and lessee representatives continued to meet quarterly in FY10. The quarterly meetings serve to keep both parties up-to-date on important activities, changes in staffing, progress of projects and other important information, without the delay of more formal correspondence. Meetings for all of the CPAI-operated pipelines with right-of-way leases administered by the SPCO occurred on October 7, 2010; December 9, 2010, and March 31, 2011.

## Nuiqsut Natural Gas Pipeline



**The above-ground section of Nuiqsut Natural Gas Pipeline shares vertical support members with the Alpine pipelines. In this photo, a USDOT/PHMSA specialist inspects the pipeline coating.**

NSB constructed NNGP to transport natural gas from the Alpine production pad, operated by CPAI, to the village of Nuiqsut, located within the Colville River Delta. The 14.4-mile pipeline shares horizontal and vertical supports with the Alpine pipelines from the production pad to the west bank of the Colville River, where it transitions below-ground until it reaches Nuiqsut.

DNR issued the NNGP Right-of-Way Lease (ADL 416202) to NSB in the spring of 1999. Construction began shortly thereafter and completed the same year; however, due to delays in finalizing gas supply contract negotiations, acquiring the necessary regulatory approvals and building the distribution facilities, NNGP did not become operational until September of 2008. By 2009, service was available to the 122 homes and 30 commercial buildings that submitted service requests to NSB. Nuiqsut is the third North Slope community (after Barrow and Deadhorse) to provide heat and electricity from natural gas.

The flow in NNGP increased in FY11, as more natural gas was consumed in Nuiqsut. NSB introduced a program to convert heating-oil appliances to natural gas in the village. Problems with new natural-gas engines were resolved, which resulted in more electrical energy being produced from natural gas and less from diesel generators.

In August of 2010, NSB performed a corrosion assessment, coating investigation, an inspection of the cathodic protection system and ultrasonic testing of pipeline wall thickness. The cathodic protection system is on the buried portion of the pipeline. The 14.4-mile line has two segments; an 8.8-mile above-ground segment that runs from the Alpine pad to the Nechelik channel crossing of the Colville River and a 5.6-mile below-ground segment that runs under the channel to the distribution point at Nuiqsut. A number of issues involving cathodic protection and coating were recorded.

Prior to NNGP start-up, the SPCO had required a professional engineering report and a field investigation of the coating deterioration on the pipeline. The coating has visibly deteriorated in the three years since the report. USDOT/PHMSA, the agency with specific authority over pipeline integrity, is responsible for monitoring pipeline coating problems. USDOT/PHMSA has been aware of the NNGP coating deterioration since prior to start-up. The SPCO continues to share information from site inspections with USDOT/PHMSA - both agencies plan to look more closely at the situation during future inspections.

## **SPCO FY11 Nuiqsut Natural Gas Pipeline Activities**

### **August 2010:**

#### **Documents Review**

SPCO administered a document review of NNGP to confirm the use of a Job Safety Analysis (JSA) prior to any pipeline maintenance or repair activity. Pipeline operators conduct JSAs to identify and, when possible, avoid potential hazards associated with pipeline work. SPCO monitors the use of JSAs and other safety procedures to verify NSB's compliance with its quality assurance program, a requirement of the right-of-way lease.

SPCO compliance staff scheduled the documents review in response to two separate unsatisfactory surveillance and field observations (SPCO report 10-SPCO-007). SPCO requested from the Nuiqsut natural gas and electric manager files documenting the use of JSAs before recently-completed work on the pipeline. After receiving and reviewing the documents, SPCO compliance staff determined that the NNGP operator was in compliance with its quality assurance program and the right-of-way lease.

During the document review, SPCO compliance staff asked the NSB for an update on its surveillance and monitoring activities. The operator reported that most of the maintenance planned for the summer of 2010 had been completed and provided a list

of the planned and completed activities (see Table 7).

**Table 7: 2010 Summer Maintenance Tasks**

Maintenance Task	Status
River Bank Mitigation	Complete
Valve Operator Upgrade	Complete
Signage Upgrade	Complete
Coating Inspection	Incomplete
Mainline Valve Service	Complete
Ultrasonic Inspection	Incomplete
Abandoned Pipe Location	Complete
Below-ground Pipe Marking	Incomplete
Corrosion Protection Inspection	Incomplete

**August 2010:**

**Surveillance and Monitoring Activities**

In August of 2010, SPCO observed the NNGP operator conduct surveillance and monitoring activities along NNGP. In addition to confirming NSB’s adherence to the commitments in its surveillance and monitoring program (required by the right-of-way lease), SPCO verified the use of the NSB Employee Safety and Accident Prevention (ESAP) program and the status of the NNGP quality assurance program.

SPCO compliance staff accompanied the NNGP operator and a USDOT/PHMSA representative for a comprehensive pipeline and right-of-way inspection. While in the field, SPCO compliance staff evaluated the lessee’s compliance with NNGP right-of-way lease obligations.

In addition to routine inspections involving leak detection, vertical support member conditions, wildlife impact assessments and other aspects of the NNGP surveillance and monitoring program, the operator assessed coating damage in order to provide site-specific information to the contractor conducting ultrasonic testing on NNGP. As a result of the inspection, the operator developed plans to repair damaged coating on portions of NNGP.

The operator plans to remove damaged coating and follow the manufacturer’s recommended actions for sealing the ends, so that water is prevented from infiltrating the coating left in place. The ultrasonic testing did not detect any abnormal atmospheric corrosion on the exposed pipeline. The operator will remove coating on areas susceptible to abnormal atmosphere corrosion for closer inspection. NSB reported plans to complete the coating removal project in the summer of 2011.

During the August surveillance and monitoring inspections, the NNGP operator visually inspected the shoreline of the Nigliq Channel for erosion and determined the need for an erosion mitigation survey. NSB contacted the SPCO the following month to report that an erosion mitigation survey had been completed in September



**The NNGP operator marked the surface location of a piece of abandoned pipe with a brightly-colored float to warn boaters.**

of 2010 and the operator planned to implement erosion mitigation measures in the summer of 2011. The NNGP operator is developing inspection criteria that will be used for routine inspections of the Nigliq Channel.

NSB maintains a community awareness program as part of its surveillance and monitoring program commitments. While in and around the NNGP right-of-way, SPCO compliance staff documented the status of the program and its implementation by the NNGP operator.

NSB had recently notified Nuiqsut residents of a boating hazard in the Nigliq Channel. Portions of abandoned pipeline in Nigliq Channel had dislodged from the channel bed and risen to the surface. The operator marked the location of the hazard with a red float (see above photo) and posted warning signs in every public venue in Nuiqsut. NSB provides periodic updates to the SPCO regarding plans to remove the abandoned pipe in the summer of 2011. The removal project was still in the planning phase at the time of reporting.

In late 2011 and 2012, SPCO compliance staff plan to conduct follow-up surveillance inspections on the river bank erosion survey, the status of pipeline coating damage and repairs, the abandoned pipe removal project and the operator's performance under NNGP Right-of-Way Lease Section 2: Environmental Stipulations.

# Southcentral Pipelines



■ ■ ■ ■ ■ Nikiski Alaska Pipeline

■ ■ ■ ■ ■ Kenai-Kachemak Pipeline

This section of the report focuses on southcentral Alaska pipeline systems under the jurisdiction of the SPCO. Before 2010, southcentral Alaska SPCO-jurisdictional pipelines included Kenai Kachemak Pipeline (KKPL), operated by Marathon Pipe Line, LLC (MPL), and Nikiski Alaska Pipeline (NAP), operated by Tesoro Alaska Pipeline Company (Tesoro). In 2010, the SPCO issued a right-of-way lease to Anchor Point Energy, LLC, for a 7.4-mile long natural gas pipeline from the North Fork production pad to the Anchor Point area. North Fork Pipeline began transporting gas on April 7, 2011.

## Kenai Kachemak Pipeline



**A Marathon worker conducts valve tests on Kenai-Kachemak Pipeline.**

**K**KPL is a high-pressure natural-gas transmission pipeline on Alaska's Kenai Peninsula. Throughout its route, the pipeline parallels Kalifornsky Beach Road, the Sterling Highway, Coho Loop Road and Oilwell Road. It was built in three phases during 2003, 2004 and 2006. The KKPL mainline was built with 12-inch pipe of 0.33 and 0.5-inch wall thickness, and is rated for a maximum allowable operating pressure of 1,480 psig. Specific physical characteristics of the pipeline and extensions are provided in Appendix F: Physical Characteristics of SPCO Jurisdictional Pipelines.

KKPL originates at Happy Valley production pad and terminates at Marathon Oil Company 500 Master Meter Building, running generally south to north. Seven Cook Inlet wells transport natural gas through KKPL. Some natural gas is distributed from KKPL for local use.

SPCO issued the original KKPL right-of-way lease on November 26, 2002. The lease was amended twice and is set to expire November 25, 2032. The first amendment, executed on June 16, 2004, added 48 acres to the right-of-way to accommodate phase two construction efforts, referred to as the Happy Valley extension. The second amendment, executed on April 24, 2006, added 35.6 acres of state land for phase three construction, referred to as the Kasilof extension.

The right-of-way release of interest was finalized in 2009, reducing the right-of-way from the construction width of 60 feet to the operational width of 20 feet.

## SPCO FY11 Kenai-Kachemak Pipeline Activities

**June 14, 2010:**

### **Valve Testing and Right-of-Way Surveillance**

In June of 2010, SPCO staff traveled to Kenai to observe valve testing at the KKPL terminus and travel the majority of the KKPL right-of-way.

SPCO compliance staff completed a lease compliance and six surveillance reports based on observations made in the field; all reflected satisfactory conditions (SPCO Letter 10-304-AS).

**September 2010:**

### **State Fire Marshal Annual Inspection**

The SFMO liaison conducted annual fire inspections of MPL facilities on September 9 and 10, 2010. A total of 13 facilities were inspected, including East Forelands, the KKPL terminus and junction. Three of the 13 facilities were found to have a total of 10 violations that have since been corrected.

**March 9, 2011:**

### **Right-of-Way Surveillance, Anchor Point Pipeline Tie-In and Document Check**

In April of 2011, KKPL began receiving natural gas from Anchor Point Pipeline (APPL). APPL originates in Anchor Point and flows north to the KKPL tie-in on the Happy Valley extension, near Ninilchik. APPL is composed of eight-inch steel pipe with fusion bonded epoxy coating, with a maximum allowable operating pressure of 1,480 psig. As a utility gas pipeline, APPL is not required to have a lease under Alaska Statute 38.35. The tie-in between APPL and KKPL was constructed during initial installation of the Happy Valley to Paxton line segment of KKPL in 2004.

In March of 2011, SPCO conducted a surveillance of the KKPL right-of-way and the site of the APPL tie-in. SPCO representatives visited the northern terminus, the Kasilof South Pad and the Happy Valley drill site near the APPL tie-in. The right-of-way appeared to be in good condition with no obstructions. The above-ground pipeline valves were located within fenced enclosures, which were well marked and in good condition. The pipeline right-of-way was well marked with markers and signs.

SPCO compliance staff arrived at KKPL Ninilchik Gate, adjacent to Oilwell Road on the Happy Valley extension, to observe the APPL tie-in. MPL completed installation of the valve stations, but portions of the valves were not fenced. The operator installed the fencing around both the tie-in and above-grade meter run piping in mid-May.

While in the Marathon Kenai office, SPCO representatives requested copies of KKPL surveillance and monitoring program documents. Specifically, SPCO staff was interested in gas line leakage surveys and aerial pipeline patrol forms. The operator provided the SPCO with copies of two gas line leakage surveys, both conducted on January 31, 2011. One survey found no leaks, while the other detected a leak at the top of the vent stack near the pig trap at the KKPL terminus. MPL provided the SPCO with a copy of the work order to repair the leak.

The operator also provided the SPCO with two work orders for the monthly patrols of the pipeline completed on January 7 and February 4, 2011.

SPCO compliance staff completed a lease compliance and five surveillance reports based on observations made during the March KKPL inspections; all reflected satisfactory conditions (SPCO Letter 11-118-AS).

## Nikiski Alaska Pipeline



**The Nikiski Alaska Pipeline operator and SPCO lease compliance staff travel by four-wheeler to inspect the pipeline right-of-way.**

**N**ikiski Alaska Pipeline is a buried pipeline that originates at the Tesoro Alaska Pipeline Company (Tesoro) Kenai Refinery in Nikiski. The pipeline route parallels the Kenai Spur Highway through the Captain Cook State Recreation Area, and then follows the coast to Point Possession before crossing the Turnagain Arm. The pipeline route continues along the Tony Knowles Coastal Trail, through the Ted Stevens Anchorage International Airport, and then along Northern Lights Boulevard. The pipeline runs near the Alaska Railroad right-of-way for the remainder of the route, terminating at the Port of Anchorage.

The Right-of-Way Lease for Nikiski Alaska Pipeline, ADL 69354, was executed on January 30, 1976, and is scheduled to expire on January 29, 2031 (see Appendix D: Acreage, Survey, and Lease Information). The lease has been amended four times since its execution – the original and subsequent amendments are available on the SPCO website.

The pipeline right-of-way is 10 feet wide for operations and maintenance (see Appendix E). The total system length is 52.8 miles; 20 miles located on state land, occupying 64.2 total acres of state land (see Appendix F).

In 1969, Tesoro began operating its first refinery near Kenai. The Nikiski Alaska Pipeline was constructed in 1976. The pipeline has a 10.75-inch outside diameter and transports refined petroleum products (jet fuel, gasoline, and diesel) from the refinery, which houses the mainline pumps, meters and pig launcher, to the Port of Anchorage. The Nikiski Alaska Pipeline's maximum operating pressure is 1,440 psig. The pipeline operates under USDOT/PHMSA regulations and transports refined products suitable for industrial, government, commercial and consumer use.

The appraisal establishing the annual rent for the Nikiski Alaska Pipeline right-of-way lease was approved on January 25, 2011. The SPCO ROW section's audit of the lands that the Nikiski Alaska Pipeline crosses was conducted during FY10. The audit determined the ownership of various sections of the right-of-way.

The Nikiski Alaska Pipeline right-of-way lease crosses seven separate land owners or management authorities. The SPCO ROW section continued to work on evaluating the benefits of establishing or continuing property management agreements with the various land owners. SPCO ROW specialists calculated the estimated rent collected over the life of the right-of-way lease that may be due to each of various land owners. The SPCO plans to correct all lease amendments that were executed in a manner inconsistent with the management of AS 38.35 pipeline right-of-way leases.

## **SPCO FY11 Nikiski Alaska Pipeline Activities**

### **June 17, 2010:**

#### **Cathodic Protection Testing and Right-of-Way Surveillance**

SPCO staff traveled to the Kenai refinery to observe Tesoro's contractor, Coffman Engineering, perform cathodic protection testing of Nikiski Alaska Pipeline. Tesoro conducts annual testing along the entire length of the pipeline, from the refinery to the Anchorage West Terminal. Cathodic protection testing includes field testing of the structure-to-soil potential to confirm that an adequate current level of at least 580mV is applied. Upon completion of the testing, Tesoro produces a report that yields the testing results and, if applicable, recommended actions.

SPCO representatives observed testing from the refinery to the PLMP 8. The remainder of the pipeline was tested prior to SPCO's arrival. SPCO compliance staff completed a lease compliance and five surveillance reports; all reflected satisfactory conditions (SPCO Letter 10-433-AS).

### **March 2011:**

#### **State Fire Marshal Annual Inspection**

The SFMO liaison's annual inspection of the Nikiski Alaska Pipeline took place in March 2011. Three Anchorage facilities were inspected; no violations were noted.

**March 3, 2011:**

**Right-of-Way Surveillance and Cathodic Protection Anode Bed Installation**

SPCO compliance staff traveled to Nikiski to conduct surveillances of the Nikiski Alaska Pipeline right-of-way and the installation of a cathodic protection deep anode groundbed.

Nikiski Alaska Pipeline has five deep anode groundbeds; one at the refinery, one at the Anchorage terminal and three along the pipeline route. Testing determined that the anode bed located upstream from Captain Cook State Park was nearing the end of its life expectancy. Tesoro decided to install a new anode bed before the old one expired to avoid any gaps in cathodic protection along the pipeline. The old anode bed will remain in the ground after the new one has been installed.



**View of the Nikiski Alaska Pipeline cathodic protection anode bed installation site**

The work site, located on private land and within the right-of-way, was monitored by 24-hour security. Tesoro personnel placed flagging and safety cones on both sides of the site to warn trail users of the work site hazard. The drill rig, operated by MW Drilling, and a large bin for drill cuttings were staged at the work site. A drip pan was placed beneath the rig for secondary containment of hazardous fluids.

In preparation for drilling, the rig operator first dug a hole to confirm the location of the pipeline. The anode hole was drilled four feet from the pipeline. The deep anode groundbed is 300 feet deep. The lower 240 feet were filled with eight clusters of 24 anodes. The anodes were covered with coke breeze, a backfill grounding material, to 10 feet above the top anode, 50 feet below the surface. A one-inch vent pipe runs adjacent to the anodes for the length of the drilled hole. The vent pipe is a PVC-type pipe with laser etching for venting the lower 250 feet. The top 50 feet is a non-slotted vent pipe above the coke breeze column. Above the anodes and coke breeze, the bore hole was sealed with 45 feet of bentonite. The top five feet of the bore hole was filled with gravel.

After the anode groundbed had been backfilled, the work crew proceeded to install the anode junction box, cathodic protection bond junction box and the coupon test station. For security purposes, the junction boxes and test station were enclosed within an eight-foot barbed wire fence.

After observing the cathodic protection anode bed installation, SPCO compliance team members, accompanied by the Tesoro pipeline and terminals manager, traveled to Captain Cook State Park to inspect the Swanson River pipeline crossing. The group then traveled to the end of the Kenai Spur Highway, where the pipeline right-of-way aligns with the platted highway easement. Snowmachine and vehicular tracks indicated that the right-of-way and surrounding area are commonly used as a travel corridor. Pipeline warning markers were present and visible along the right-of-way.

SPCO staff and the Tesoro pipeline and terminals manager continued along the right-of-way to the pipeline crossing at Halbouty and Holt-Lamplight roads, then traveled west for 1.25 miles toward the refinery along Pipeline Road. All areas had visible pipeline warning markers and appeared to be in good condition, despite the evidence of vehicular traffic on the right-of-way.

On March 3, 2011, SPCO staff sent the Tesoro pipeline and terminals manager a formal request for multiple Nikiski Alaska Pipeline documents. The requested documents included the cathodic protection project drawings and procedures, pigging procedures and the recently updated aerial surveillance form.

On April 7, 2011, the SPCO received a copy of the stamped anode bed drawings, an updated aerial surveillance form and Tesoro's pipeline pigging procedures. SPCO compliance staff completed a lease compliance and eight surveillance reports, based on observations made in the field and from the following document check. All the reports indicated satisfactory pipeline system and right-of-way conditions (SPCO Letter 11-116-AS).

## North Fork Pipeline



**North Fork Pipeline is the first common-carrier pipeline in Alaska to be constructed using composite pipe material. In the above photograph, the construction crew lowers the Fiberspar LinePipe into the excavated trench.**

Last fall, the SPCO granted Anchor Point Energy, LLC, an AS 38.35 right-of-way lease for the purpose of constructing dual four-inch natural gas pipelines, called North Fork Pipeline. The lessee submitted a lease application to the SPCO in early 2010.

North Fork Pipeline originates at the North Fork production pad, located 8.6 miles east of Anchor Point, and terminates in Anchor Point. The pipeline ties into Anchor Point Pipeline, operated by Alaska Pipeline Company. The total pipeline length is 7.4 miles, with 6.6 miles of the length on state land.

North Fork Pipeline comprises two segments: 6.25 miles of Fiberspar LinePipe™ and 1.25 miles of standard steel pipe. Fiberspar LinePipe is a composite pipe consisting of an inner thermoplastic pressure barrier reinforced by high-strength glass fibers embedded in an epoxy matrix. North Fork Pipeline is the first common carrier line regulated by USDOT/PHMSA to be constructed out of a composite pipe material. USDOT/PHMSA required the operator to apply for a special permit with project-specific stipulations (learn more about USDOT special permits at <http://www.phmsa.dot.gov/special-permits-approvals>).

Anchor Point Energy completed the design basis for North Fork Pipeline in July of 2010. In the design basis, Anchor Point Energy committed to build the pipeline to a variety of industry standards and to conform to various good design practices. Based upon the design basis and other information, the SPCO lead engineer analyzed the project and recommended its acceptance. The lessee later made revisions to accommodate changes required by the USDOT/PHMSA special permit and issued an updated version of the North Fork design basis in October of 2010.

The special permit required several items, the two most important being construction of a length of steel pipeline and of short parallel sections of plastic pipe, which in the future could be removed and tested. The section of North Fork Pipeline constructed out of steel is in a populated area of the Kenai Peninsula, which is designated as “Class 2” under USDOT/PHMSA regulations. The remainder of North Fork Pipeline is in a less-populated “Class 1” area and constructed with the Fiberspar LinePipe material.

The parallel sections of pipe are intended to have one pipe shut down and isolated and the other brought into service so the isolated pipe can be destructively tested. The purpose of method is to gather information on the aging characteristics of the pipe. Fiberspar LinePipe has undergone computer simulations and accelerated aging tests; however, the material has been sold commercially for oil and gas service for less than 12 years. If successful in the long term, fiber-composite pipe has the potential to significantly reduce project costs and make accessible to producers remote fields previously considered uneconomical.

Anchor Point Energy, LLC, began pipeline installation in October of 2010 and completed construction efforts the following February, one year after submitting its right-of-way lease application. The 50-foot right-of-way width was reduced to a 20-foot operating width post-construction. SPCO and the operator announced sustained deliveries of gas on April 7.

An appraisal to determine the annual rent for the North Fork Pipeline right-of-way was due on June 1, 2011. Upon request by Anchor Point Energy, the SPCO extended the appraisal deadline to August 29, 2011. Based on the lease requirements, an as-built survey of the operational right-of-way is due on April 2, 2012.

## **SPCO FY11 North Fork Pipeline Activities**

SPCO compliance staff made eight trips to Anchor Point to monitor construction activities associated with the North Fork Pipeline in 2010 and early 2011. Field visits resulted in seven lease compliance and 25 surveillance reports.

### **Phase 1 Construction**

SPCO compliance staff was on-site for three days during Phase 1 construction. SPCO representatives monitored numerous activities during Phase 1 construction, including right-of-way clearing, steel pipe segment welding, valve station construction and horizontal directional drilling under the Anchor River.

## **October 15, 2010:**

### **Right-of-Way Preparations and Damaged Pipe Repair**

The majority of the right-of-way for Phase 1 construction had been cleared prior to the first SPCO surveillance inspection. The work crews laid dual four-inch steel pipe in 40-foot segments and began welding the pipe sections together on October 15. The lessee air and hydro-tested the pipe to confirm that the welds were secure. The workers staged the welded pipe segments on rollers to assist in the HDD.

Construction crews built the pad for the blow down station, where the dual fiberspar pipelines connect to the dual steel lines, prior to the SPCO's October compliance inspection. The pad is on the eastern end of what was the Phase 1 plan area. The transfer-of-custody pad, where the North Fork Pipeline connects to the eight-inch steel Anchor Point Pipeline, was being constructed during the SPCO visit.

The coating on approximately 68 segments of steel pipe incurred damage of various degrees during transit to the Phase 1 construction site. The operator re-coated the damaged pipe after the SPCO site visit. All 68 segments of pipe were re-coated.

SPCO compliance staff completed a lease compliance and seven surveillance reports based on observations from the October compliance inspection; all reflected satisfactory conditions (SPCO Letter 10-478-AS).

## **October 26 and 27, 2010:**

### **Re-coated Pipe Inspection and HDD Plan Review**

When SPCO compliance team members arrived at the Phase 1 construction site in late October, the work crews had already re-coated the damaged pipe segments and staged them along the construction right-of-way. The welding inspectors performing the radiographic work met with SPCO staff and displayed negatives taken of all the welds on the North Fork Pipeline. SPCO staff and a USDOT/PHMSA representative reviewed the welds and the operator qualification records of the welding inspectors. Both inspectors were up-to-date on all of their qualifications.

SPCO staff observed the area near the transfer-of-custody pad at the western terminus of the pipeline, where the pipe was staged on the right-of-way. All welds were completed, with the exception of the area where the pipeline would tie into



**Steel pipe staged at the construction site - segments with damaged coating were recoated before being used to construct North Fork Pipeline.**

the segments used in the HDD. SPCO staff inspected the re-coated pipe segments. The operator re-coated the pipe using a paste called Protal 7125, a high-build liquid coating that is hand-applied and has a fast curing rate at temperatures of -20 degrees Fahrenheit and greater.

The operator applied Denso Paste®, a corrosion inhibitor, to the pipe welds. The paste penetrates any existing rust, displaces moisture, pacifies the surface and aids the adhesion of petrolatum tapes and mastics. Densyl Tape® was then wrapped around the paste. Densyl Tape is designed to withstand extreme temperature variations and provides corrosion protection.

Anchor Point Energy personnel provided SPCO staff with drawings for the HDD. The length being bored for each pipe was approximately 620 feet, with a minimum depth of cover of 15 feet under the Anchor River. Each pipe was bored individually, with each bore taking approximately four days to drill. SPCO compliance staff prepared a lease compliance report and three surveillance reports based on field observations; all reflected satisfactory conditions (SPCO Letter 10-569-AS).

## **Phase 2 Construction**

SPCO compliance staff was on-site for seven days during Phase 2 construction. SPCO staff monitored the right-of-way preparation for construction and the Fiberspar LinePipe installation from the production pad to the Phase 1 tie-in at Coleman Lantern Road.

### **December 3 and 10, 2010: Fiberspar LinePipe Staging**

Work crews staged 23 spools of Fiberspar LinePipe in a gravel pit, with each spool containing approximately a half-mile of pipe. SPCO staff did not observe any damage to the Fiberspar LinePipe.

SPCO staff observed surveyors marking the boundaries of the 50-foot construction right-of-way with survey lathe. Snowmachines, along with a D3G Caterpillar tractor and D6H Caterpillar bulldozer, were used to pre-pack the construction right-of-way in preparation for ice road construction to facilitate Phase 2 activities. No pre-packing occurred while SPCO staff was present. The heavy machinery was parked at the staging area near the south end of the gravel pit.

SPCO staff traveled approximately two miles of the right-of-way with the surveyors and noted that the snowmachines and heavy machinery were within the surveyed area and did not cause damage to the vegetative mat. SPCO compliance staff prepared a lease compliance and three surveillance reports based on field observations; all reflected satisfactory conditions (SPCO Letter 11-005-AS).

**January 7, 2011:**

**Compliance Inspection and Land Use Permit**

Two crews were working within the North Fork Pipeline construction right-of-way during a compliance inspection in January of 2011. One crew was installing ground piping on the North Fork pad and the other conducted routine right-of-way work.

The operator stored the glycol mix used for hydro-testing the Phase 1 section of the pipeline in a large tank on the pad. A secondary containment liner was in place around the tank. The operator would reuse the glycol to conduct hydro-testing on the Phase 2 section of the pipeline.

SPCO staff and the on-site supervisor traveled portions of the construction right-of-way to conduct a surveillance inspection. The ice road appeared solid and capable of handling the vehicle weight. The construction crew had used a hydro-ax to remove brush and vegetation along the right-of-way.

SPCO staff was on-site to observe the work crew remove the vegetative mat along sections of the right-of-way. To preserve the integrity of the surface vegetation, the workers used an excavator with a saw blade attachment to cut the top 18 inches of frozen material into large square blocks. A second excavator followed with a flat tray to pick up the vegetative block and place it adjacent to the pipe trench to allow for easy replacement. During one inspection, SPCO staff noted that some of the vegetative blocks were staged outside of the 50-foot construction right-of-way. After consulting with the site supervisor, it was decided that the best course of action would be to amend the construction right-of-way to include the small amount of additional land, rather than risk damaging the blocks by moving them back inside the right-of-way. SPCO staff emphasized to the operator that all future construction activities must occur within the surveyed construction right-of-way.

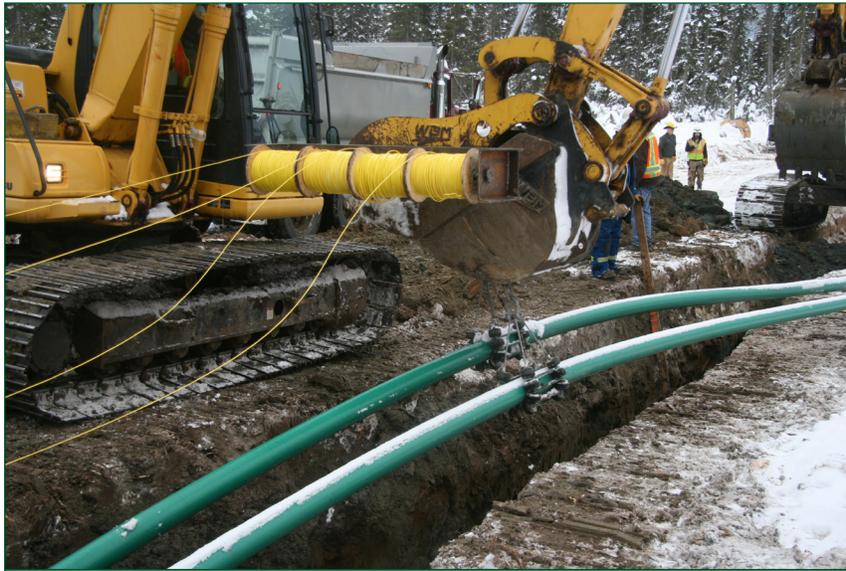
SPCO ROW staff issued a land use permit to Anchor Point Energy for the temporary storage of frozen blocks of muskeg surface materials excavated during construction of the pipeline and space for up to 14 temporary truck turnarounds. The lands were to be temporarily used for off-road winter travel. The permit was effective beginning January 28, 2011, and expired on March 15, 2011. SPCO compliance staff prepared a lease compliance and two surveillance reports based on field observations; all reflected satisfactory conditions (SPCO Letter 11-017-AS).

**January 18 and 19, 2011:**

**Trenching and Installation**

Prior to excavation and burial, work crews unspooled two 3,000-foot pipe segments and staged them along the edge of the construction right-of-way using a hydraulic carousel deployment system on the back of semi-trailer. The hydraulic system unspools pipe as the truck moves along the right-of-way. SPCO staff was on-site to witness the construction crews working with pipe segments that were unspooled on January 16, 2011.

Four excavators performed the trenching, pipe-installation and subsequent reburial and backfilling. The first excavator trenched the ditch; the second followed while lowering the pipe into the trench. Workers employed a cradle with rollers designed for Fiberspar LinePipe that slowly lowers the pipe and four tracer wires into the trench. The cradle guided the pipe around bends and into the ditch. The specialized



**Construction crews use an excavator and a special assembly to guide the Fiberspar LinePipe into the trench.**

process helps maintain bend radius and reduces the force needed to pull the line around corners. Four spools of tracer wires were mounted above the cradle. Workers deployed the tracer wires while placing the LinePipe in the trench. Two tracer wires are located on the outside of the two pipes, while the other two lay between. After the workers placed the tracer wires adjacent to the pipes, they lowered fiber optic line and two warning tapes in the ditch. The third excavator placed soft backfill material on

the pipe; the fourth excavator completed the backfill by bringing the trench to grade and replacing the vegetative blocks over the pipe.

To ensure the pipes are not damaged by large or hard materials in the soil, work crews buried the pipes by laying 18-24 inches of soft material on top of the pipe before backfilling the trench with the remainder of the spoils. Prior to backfilling, an on-site engineer examined the spoils piles to ensure they had not frozen and there were no existing boulders or cobbles that could damage the pipe.

SPCO staff observed the workers unspooling one 3,000-foot segment of Fiberspar LinePipe. Using a crane, the construction crew placed the spool of pipe on the hydraulic carousel deployment system and proceeded to transport it to the construction right-of-way.

Workers placed a sleeve on one end of the pipe before anchoring it to an excavator. Once the pipe was anchored, a crew member drove the truck west along the construction right-of-way. When the entire pipe segment had been unspooled, the workers staged it on the north side of the right-of-way.

SPCO compliance staff prepared a lease compliance and four surveillance reports based on field observations; all reflected satisfactory conditions (SPCO Letter 11-025-AS).

**February 8, 2011:**

**Construction Progress Inspection**

Construction crews had installed Fiberspar LinePipe along the portions of North Fork Pipeline right-of-way. SPCO staff found the right-of-way to be in good condition. Workers had placed the vegetative blocks over the buried pipe; the top of each block was 18-24 inches above ground-level. In the spring, the blocks will thaw and remold into the right-of-way.

SPCO staff prepared a lease compliance and two surveillance reports based on field observations; all reflected satisfactory conditions (SPCO letter 11-035-AS).

**March 29, 2011:**

**Start-up**

In late March, SPCO staff traveled to the production pad and pipeline right-of-way to observe the first day of North Fork Pipeline operations. Unfortunately, pipeline start-up was delayed due to extended hydro-testing (a requirement of the USDOT/PHMSA special permit) and other regulatory obligations. All construction activities associated with pipeline operation were complete. SPCO compliance staff prepared a lease compliance and four surveillance reports based on field observations; all reflected satisfactory conditions (SPCO letter 11-120-AS). Anchor Point Energy, LLC, announced sustained deliveries of gas on Thursday, April 7.

## Proposed Pipelines

Before a pipeline right-of-way lease is issued by DNR, the SPCO conducts a review and decision process as required by AS 38.35, the Right-of-Way Leasing Act. Each potential pipeline lessee is evaluated to ensure that they meet the “fit, willing, and able” requirements outlined in AS 38.35.100. In FY11, the SPCO was in various stages of the leasing process with several potential and actual applicants. See below for a brief description of these pipeline projects.

The SPCO anticipates increased activity associated with several natural gas pipeline projects. The Alaska Pipeline Project (APP) will continue field data collection efforts in preparation for a right-of-way lease application. The Donlin Gold natural gas pipeline project is performing field studies to facilitate pipeline design and alignment. The Alaska Stand Alone Gas Pipeline project (ASAP), pursuant to House Bill 369, was issued a right-of-way lease in July of 2011.

### **Alaska Natural Gas Development Authority**

On April 4, 2005, the Alaska Natural Gas Development Authority (ANGDA) filed an application with the DNR Commissioner for a conditional lease across State lands for a natural gas pipeline. The proposed pipeline would commence near Glennallen on Ahtna, Inc. lands, at Trans-Alaska Pipeline System Milepost 689.5, and terminate south of Palmer near the Glenn Highway and Parks Highway interchange where it would connect to an existing distribution system. The DNR Commissioner signed the conditional right-of-way lease on July 20, 2006.

### **Alaska Pipeline Project**

TransCanada and ExxonMobil are working together to advance APP. The goal is to build and operate a pipeline system that will help develop Alaska’s vast North Slope natural gas resources, support Alaska’s, Canada’s and the U.S. economies, and provide a reliable, clean supply of domestic energy for the State of Alaska and North America. APP provides Alaska with an option to develop its North Slope natural gas resources.

### **Alaska Stand Alone Pipeline Project**

The Alaska Stand Alone Gas Pipeline is being planned as an in-state gas pipeline designed to provide long-term, stable supplies of natural gas from the North Slope to Fairbanks and Cook Inlet areas, as well as other communities where practicable. In March of 2010, the Alaska Legislature mandated that a group of industry professionals convene under the corporate banner of Alaska Housing Finance Corporation (AHFC) for the specific purpose of developing, refining and producing an in-state natural gas pipeline project plan by July 1, 2011 (see link below). The focus of the pipeline project is to supply gas to Southcentral Alaska by 2016 to offset the projected supply decline.

Alaska Gasline Development Corporation (AGDC), a subsidiary of AHFC, submitted a revised application dated March 21, 2011, in accordance with the Alaska Right-of-Way Leasing Act, AS 38.35.050, for a proposed Alaska Stand Alone Gas Pipeline/ASAP right-of-way lease. On Monday, July 25, the SPCO issued a comprehensive right-of-way lease to AGDC.

## **Donlin Gold**

Donlin Gold mine proponents are investigating the practicability of a natural gas pipeline from Cook Inlet to the mine site. The 315-mile buried pipeline would stretch from Beluga to the future Donlin Gold mine site, just northwest of Georgetown, which has the potential to be one of the largest gold mines in the world. This pipeline would provide natural gas for Donlin Gold, LLC, to fuel the site.

Donlin Gold, LLC staff have taken the effort to make contact with the SPCO staff early in the process. This early communication has allowed SPCO to inform Donlin Gold of the SPCO's process for analyzing an AS 38.35 common carrier pipeline right-of-way for the fit, willing and able analysis, coordinate necessary data collection, limit duplication of research between state agencies and update interested public with available information. SPCO has received several questions from the public regarding this project and has given what information is available. This project is in the very early stages and the SPCO has not received an application to-date.

## **Point Thomson**

In October of 2009, ExxonMobil proposed a project to further develop the Point Thomson oil and gas field. Point Thomson, which is located approximately 60 miles east of Deadhorse on the Beaufort Sea coast, and 60 miles west of Kaktovik, just west of the Arctic National Wildlife Refuge, holds an estimated eight trillion cubic feet of natural gas and 200 million barrels of condensates.

The Point Thomson pipeline project requires authorization from the U.S. Army Corps of Engineers (USACE) under Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act. The project would recover liquid condensate from natural gas, and extract oil. The residual gas would be injected back into the reservoir, conserving it for future use. ExxonMobil would develop onshore and offshore portions of the Thomson Sand Reservoir using long-reach drilling technology from onshore pads. Extracted condensate and oil would be shipped via a 22-mile export pipeline to connect to the Trans-Alaska Pipeline System to market.

The USACE has been designated as the lead federal agency on the Point Thomson project, which includes field development plans and the pipeline. State DNR will participate as one of the cooperating agencies. The SPCO has been supporting DNR's coordinating efforts during the scoping portion of the Draft Environmental Impact Statement (DEIS).

The SPCO has also been working with ExxonMobil during its preparation of an application for an AS 38.35 right-of-way lease for the development, construction and operation of a gas liquids export pipeline. This pipeline is a critical part of the Point Thomson project and ExxonMobil has worked closely with the SPCO to ensure the submission of a complete application.

To date, the SPCO has participated in the five DEIS scoping meetings held in January of 2010. These scoping meetings included the entire Point Thomson Project Team from ExxonMobil and its consultants as well as representatives from each of the cooperating agencies. The scoping meetings were held in Kaktovik, Fairbanks, Nuiqsut, Barrow and Anchorage. While the meetings covered the project in its entirety, and was specifically for the purposes of the DEIS, they provided a great opportunity for the SPCO to hear from communities about any issues that may concern the export pipeline.

In early March of 2010, ExxonMobil Pipeline Company asked the SPCO to participate in a pre-application meeting to discuss the details of the AS 38.35 application for pipeline right-of-way lease. At the meeting, specifics about the pipeline right-of-way, the design and the construction were discussed.

In August of 2010, ExxonMobil submitted a lease application for the Point Thomson Export Pipeline (PTEP). The application included the proposed pipeline route, a detailed project description, environmental reports and other relevant information. ExxonMobil finished the design basis for the PTEP in October of 2010 and submitted it to the SPCO. After a review period, the SPCO approved the design basis and posted it online for public review. ExxonMobil has made several minor revisions since initially submitting the design basis, principally in the ballistics testing and pigging sections of the document.

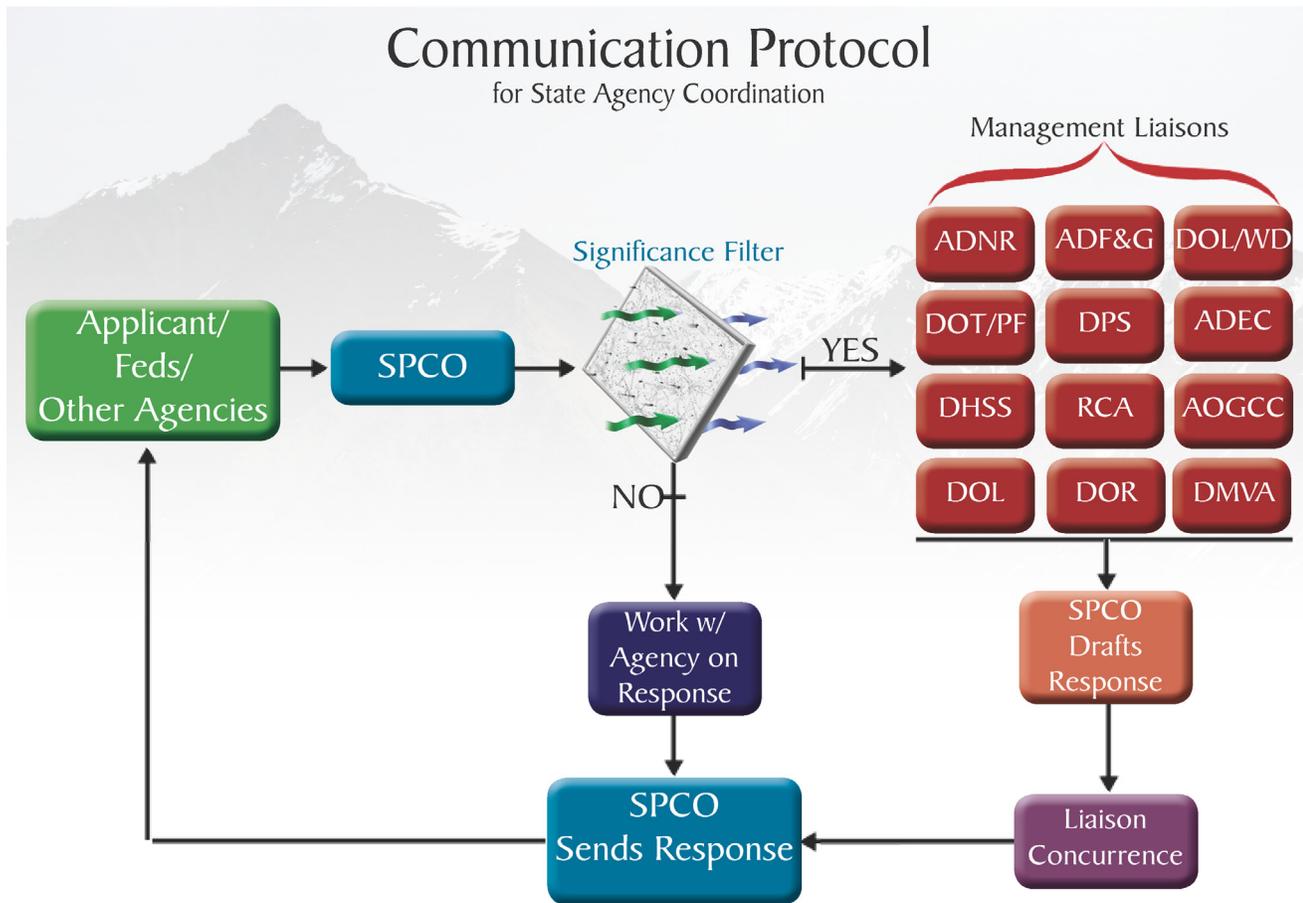
SPCO continues to receive project updates from ExxonMobil regarding the DEIS. The USACE timeline for the Point Thomson DEIS process extends past the current projection for SPCO's notice, analysis and review for the AS 38.35 lease.

## **Polar LNG**

On July 15, 2011, Polar LNG, LLC, submitted a complete right-of-way lease application to the SPCO. Polar LNG, LLC, proposes to construct an above-ground pipeline to transport natural gas. The proposed pipeline would extend from Flow Station 1, Prudhoe Bay Unit, to Child's Pad, in Deadhorse.

The proposed route would parallel an existing pipeline from Flow Station 1 to Drill Site 12, running west of Drill Site 1, through North Slope lease tracts, across an unnamed lake (locally known as Lake McDermott), and then east to Child's Pad. The proposed pipeline right-of-way will contain one eight-inch diameter pipe. The pipeline design maximum throughput is approximately 50 million standard cubic feet per day. The proposed pipeline will supply gas to a proposed natural gas liquefaction plant.

## Special Projects



The above diagram represents the SPCO-managed flow of information between pipeline right-of-way applicants and State of Alaska agencies.

### SPCO Communication Protocol

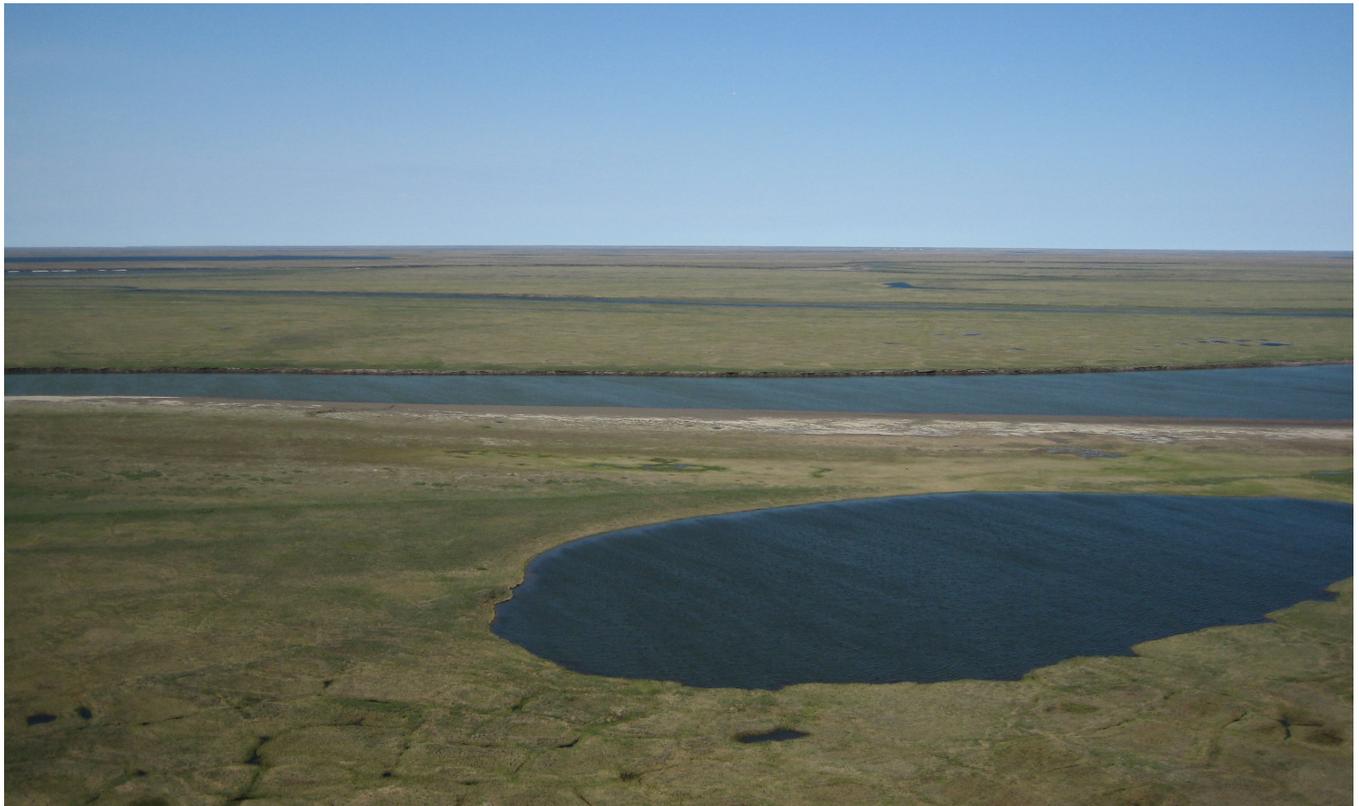
In FY11, the SPCO issued a lease for the seven-mile North Fork Pipeline. North Fork was the first new pipeline lease issued by the SPCO in nine years. Today, with multiple gas pipeline proposals, a proposal for a new pipeline route for existing Cook Inlet production and several new pipelines under review on the North Slope, there are numerous pipelines in various stages of the lease pre-application and application processes. State agencies will play an important role in the project review process and lease development. The challenge for the SPCO is to coordinate the participation of numerous agencies appropriately.

The status quo, with regards to the State's handling of agency participation in pipeline projects subject to the Right-of-Way Leasing Act (AS 38.35), has worked up to this point; however, recent efforts with several major projects moving forward simultaneously have exposed communication deficiencies both within and between participating state agencies. The problem lies in the lack of a well-organized protocol for distribution of documents and decision-making at the correct level within each agency. The lack of a well-defined process has led to some project proponents and federal agencies independently soliciting information and input directly from various levels within a department.

The SPCO requested that the commissioner for each agency with a role in pipeline permitting and oversight designate a “management liaison” to represent the commissioner’s office. The position has become the focal point to help disseminate important documents, review key positions and policy decisions and ensure that the right people get the information they need to make informed decisions.

The SPCO is committed to allocating the necessary resources to ensure that coordination efforts are successful. With multiple potential pipelines under discussion or review at the SPCO, it is more important than ever that the State maintain a clear protocol for pipeline project management to make certain that affected departments and agencies are kept current on significant issues.

### **Colville Delta Five (CD-5)**



**Aerial view of the CD-5 area**

The proposed CD-5 flowline will transport unprocessed three-phase fluid (oil, gas and water) across the Nigliq Channel of the Colville River. CD-5 is a CPAI well production site proposed as a satellite development of the Alpine Field. The flowline will carry three-phase (gas, oil and water) production from wells to the Alpine processing facility. Multiple pipelines carrying other products will also be part of the crossing, but the source of the permitting controversy has been the three-phase oil pipeline.

The U.S. Army Corps of Engineers denied a permit for a proposed bridge that would carry both vehicles and pipelines. CPAI appealed the decision. The Corps agreed that there were grounds for reconsideration and remanded the decision back to its Alaska

office. The State of Alaska entered the appeal as the land owner.

Although the SPCO would not have jurisdiction over the proposed CD-5 pipelines, the office was involved in analysis of and support for the proposed CPAI development. The SPCO participated in site visits, assisted in research, prepared letters and issued technical opinions.

Three engineering opinions applied the knowledge and experience of the SPCO as a regulator of numerous North Slope pipelines. The permit controversy centers on finding the most practicable river crossing option under the Section 404 Clean Water Act permitting guidelines. The two major design and development decisions in the practicability determination are:

- A horizontal directional drilled crossing in lieu of a vehicle or pipeline bridge
- Road vs. roadless development

The SPCO issued the following opinions:

### **Scour**

An independent engineering consultant reviewed the scour design of the proposed CD-5 bridge and concluded that the river channel is unlikely to experience significant changes in the area of the bridge and that scour at the proposed bridge crossing is likely to be localized or temporary, or both. The SPCO agreed with the conclusions. The bridge has thin piers and its abutments are wide, spanning the river under normal flow conditions. The deck is placed above the 200-year flood. These design features greatly reduce the risks of both water scour and ice gouging. Because so little of the river flow is affected by this design, both local and generalized scour of the riverbed at this location will be minimal.

### **History**

The majority of pipeline and flowline water crossings are above-ground. In fact, there are few examples of below-grade water crossings on above-grade pipelines in the Arctic. The Badami pipelines have two trenched crossing locations. There is one HDD crossing location on the Colville River. A section of the TAPS mainline is buried in the unfrozen bed of the Sagavanirktok River. Adding the minor channels and lakes crossed by infield flowlines and major pipeline crossings, hundreds of examples of above-grade pipelines or flowlines exist. The report concluded that, unless special circumstances exist, above-ground crossings are the preferred option. Above-grade crossings with road access create more opportunities for monitoring, inspections and other activities that lead to higher integrity levels.

## **Optimal Crossing**

An engineering analysis evaluated the crossing location proposed at Nigliq Channel for environmental protection. The analysis segmented the HDD and bridge options into several attributes, such as reliability or certainty of design, internal and external corrosion, hydrology/ice/scour, maintenance and repair, surveillance, containment and incident response. The conclusion drawn from the analysis is that a bridge is the optimal choice for environmental protection.

The SPCO agrees that the proposed vehicle and pipeline bridge with road development is the optimal choice for the Nigliq Channel crossing and the CD-5 development.

## **Land Administration System Case File Audit**

SPCO right-of-way specialists continue to work on part two of a three-part audit of the land administration system (LAS) case file records for each active pipeline right-of-way lease and grant case file administered by the SPCO. The LAS system is the statewide land records system, available to the public at: <http://dnr.alaska.gov/projects/las/lasmenu.cfm>.

The LAS system is used to locate, research and verify land ownership and land use on State lands. Keeping the LAS case file records accurate and up-to-date is important for DNR adjudicators and the public when researching the status of State lands.

The LAS audit is divided into three parts for each case file audited. Part one of the audit involved review and update of each of the four basic record types in LAS: summary record, land record, transaction record and legal description record. Part two of the audit involves a quality control check of the part one updates and review and update of LAS revenue and billing subsystem records for each case file. Part three will include a final quality control check of updates made during parts one and two for each case file along with any final edits, corrections and updates to the LAS case file records.

During FY10, part one of the audit was completed, except for TAPS, ADL 63574 case file. During FY11, SPCO right-of-way staff began part two of the audit and entered the data for the TAPS case file. Part two of the audit included verifying the LAS updates completed in FY10 and auditing SPCO pipeline-related financial records in the LAS revenue and billing subsystems. In FY11, there were 18 active case files involving constructed pipelines, one more than in FY10 with the addition of North Fork Pipeline. Only those SPCO case files involving applications, leases, grants or contracts with a constructed pipeline were included in this audit.

The SPCO ROW section is also in the process of updating and correcting the location of the pipeline leases shown in Alaska Mapper. Alaska Mapper is a mapping system that provides a visual interface into LAS, providing visual, interactive access to casefile data from status plats and links to land case file summaries, details and

abstracts. The way that DNR authorizations are displayed in Alaska Mapper is dependent upon the completeness and accuracy of LAS. During FY11, the SPCO right-of-way specialists requested from all the pipeline lessees their geographic information system (GIS) data for the locations of the pipelines and of the surveys of the right-of-way leases. Once the SPCO receives the GIS data, it will be provided to the DNR Information Resource Management Section, Land Status GIS Unit to upload to Alaska Mapper.

## Lessee Annual Reports

The lessee annual reports play an important role in SPCO lease compliance oversight. The SPCO compliance section carefully reviews each report to ensure the lessee met all applicable lease requirements and the expectations of the State Pipeline Coordinator.

A lessee is required, per lease stipulation, to provide the following information in its annual report:

- Surveillance and monitoring program results, including annual and cumulative changes in facilities and operations
- The effects of changes on the pipeline system and the proposed actions to be taken as a result of the changes
- A list, by quarter, of all surveillances, audits, self-assessments or other internal evaluations
- A summary of findings, actions items and other observations identified in the listed evaluations
- Descriptions of corrective and preventative actions planned or implemented
- The state of, changes to and results from the risk management, quality assurance and internal and external safety programs
- Specific efforts made to comply with the right-of-way lease and stipulations
- Information on construction, operations, maintenance and termination activities necessary to provide a complete and accurate representation of the lessee's activities and the state of the pipeline system
- A summary of all events, incidents and issues which had the potential to, or actually did, adversely affect pipeline system integrity, the environment or the safety of workers or the public
- A summary of the lessee's response to the items mentioned in the previous bullet
- A summary of all oil and hazardous substance discharges, including the incident date; a description of the substance; the cause, volume and location of the discharge and subsequent clean-up actions.

The State Pipeline Coordinator may request additional information of the lessee, if necessary. After the SPCO reviews the lessee annual reports, the compliance section summarizes the information for inclusion in the SPCO Annual Report and compliance section field activities are reassessed to account for planned activities and events.

## BP Annual Report Review and Summary

### Introduction to the lease and lessee reporting requirements

BP Exploration (Alaska) Inc. (BPXA), is the designated operator for seven pipelines with right-of-way lease agreements between the State of Alaska and BP Transportation (Alaska) Inc. (BPTA). The BPXA-operated pipeline systems are Badami oil and utility, Endicott, Milne Point oil and product and Northstar oil and gas pipelines. The Milne Point product pipeline was not operational during 2010 and is expected to remain out of service in 2011.

In 2010, the SPCO approved the transfer of Northstar right-of-way leases from BPTA to Northstar Pipeline Co., LLC. SPCO also approved an amendment adding 1.18 acres of State land to the Endicott pipeline right-of-way lease in early 2010. BPTA applied for the additional acreage to account for portions of the pipeline system outside of the original right-of-way.

### Quality Assurance Program (QAP)

BPTA maintains a QAP, last revised in 2004, to meet lease and regulatory requirements for the Badami, Endicott, Milne and Northstar pipeline right-of-way leases. BPXA revised the QAP in 2010 and will submitted a draft version to the SPCO on June 13, 2011. SPCO approved the revised QAP on August 13, 2011.

## Surveillance and Monitoring Program

### Surveillance

BPXA defines surveillance as the qualitative visual aspect of the surveillance and monitoring program. Surveillance activities include flying (visual and FLIR), driving and walking inspections. BPXA meets the USDOT inspection requirement of intervals not exceeding three weeks, but at least 26 times each calendar year.

**Table 8: BPXA 2010 pipeline and right-of-way inspections**

Inspection Method	Badami Oil	Badami Utility	Endicott	Milne Oil	Milne Product	Northstar Oil	Northstar Gas
Aerial (total)	69	69	0	0	0	61	61
Visual	63	63	0	0	0	57	57
FLIR	6	0	0	0	0	4	4
Driving (routine)	0	0	58	27	27	0	0
Driving (requested)	0	0	0	194	194	0	0
WSS	1	1	1	1	1	1	1

## **Aerial and driving surveillance results**

BPXA did not detect any anomalies during aerial inspections of Badami and Northstar pipelines conducted in 2010. BPXA did not identify any anomalies during driving surveillances of Endicott and Milne Point pipelines. In some cases, snow and severe weather conditions prevented thorough inspections. Routine inspection reports generated from Milne Point surveillances documented minor damage to pipeline vibration dampeners.

## **WSS results**

BPXA contracted MISTRAS Group, Inc., an asset-protection contractor for oil and gas and other industries, to conduct WSS inspections on all SPCO-jurisdictional pipelines. On March 11, 2010, MISTRAS inspectors reported a wind-induced vibration event on Badami oil pipeline. Strong winds in the area caused pipeline vibrations ranging from 0.75 to 1.75 inches. The BP corrosion, inspection and chemicals group determined that a engineering evaluation of the vibration event was warranted.

During a WSS of Endicott pipeline, MISTRAS inspectors discovered that two pipelines, the 32-inch diameter seawater treatment plant pipeline to Flow Station 2 and the 24-inch gas pipeline to Flow Station 2, settled on top of Endicott Pipeline. BP officials determined that the situation would not result in damage to either pipeline, and no immediate action was necessary. The two pipelines were lifted to design grade and shimmed; BP is in the process of designing and scheduling of a permanent vertical support member installation.

Snow cover obscured portions of five of the BPXA-operated pipelines, which hindered survey work in some instances. The WSS of the Milne Point pipelines was not affected by snow drifts.

Based on the WSS reports for all BPXA pipelines, the BP corrosion, inspection and chemicals group recommended the following actions:

**Gouge** - feather gouge for smooth transitions and perform magnetic particle and ultrasonic testing

**Jacket perforations/separations** - repair and seal work needed on all but the Badami gas pipeline

**Jacked VSMs** - transit surveys to evaluate compliance with elevation requirements

**Bent flanges and guides** - no impact on structural integrity or purpose; no action required

**Saddles not bearing weight properly** - evaluate

**Damaged pipeline supports** - determine impact on purpose

**Missing insulation** - re-insulate bare pipe

**Broken/loose saddle bands** - re-band or adjust

**Broken or misaligned vibration dampeners** - repair or adjust as necessary

**Crushed pipeline insulation** - monitor and repair or replace as necessary

## **Monitoring**

BPXA employs methods that compile quantitative information about pipeline systems to satisfy the monitoring aspect of its surveillance and monitoring program.

In 2006, BPXA initiated a formal risk assessment program for Northstar pipelines. Since its inception, BPXA has expanded the risk assessment program to include all its SPCO-jurisdictional pipeline systems.

The program utilizes the Muhlbauer pipeline integrity risk model to evaluate risks, barriers to risk and steps for effective mitigation. BPXA's goal is to better-align the formal risk assessment program with the unique conditions found on the North Slope. BPXA's most-recent formal risk assessment of its SPCO-jurisdictional pipelines, which took place in April of 2010, determined that all were fit for service. The assessment involved personnel from multiple BPXA and BPTA divisions and took into account preventative measures and actions resulting from the 2009 formal risk assessment.

## **Comprehensive Integrity Program**

The purpose of the BPXA comprehensive integrity program is to monitor known corrosion locations, identify new areas of corrosion and determine associated corrosion mechanisms. In 2010, BPXA did not identify any anomalies that required action; random comprehensive integrity inspections of Badami, Endicott and Milne Point (oil) pipelines will continue during 2011.

BPXA did not include Northstar (oil and gas) and Milne Point (product) pipelines in its 2010 comprehensive integrity program. BPXA conducted thorough inspections of the Northstar pipelines, which are mostly sub-sea, in 2009 and did not detect any internal corrosion, and the Milne Point (product) pipeline was out-of-service. BPXA determined that additional integrity monitoring of those pipelines in 2010 was unnecessary.

BPXA uses the following grading system to evaluate internal and external pipe wall loss due to corrosion and erosion:

- A - no damage
- B - 1% - 20% wall loss
- C - 21% - 40% wall loss
- D - 41% - 60% wall loss
- E - 61% - 80% wall loss
- F - more than 80% wall loss, not fit for service

**Table 9: Comprehensive Integrity Program/Special Requests by Operations**

Pipeline Leases	2010 Inspections	2010 Locations	Pipeline Grade			2011 Inspections Planned	Changes Noted/Comments
			A	B	C		
Badami Oil	4	4	4	0	0	Yes	No follow-up needed
Badami Utility	98	92	92	0	0	Yes	No follow-up needed
Endicott	2	2	1	1	0	Yes	No follow-up needed
Milne Oil	48	41	41	0	0	Yes	No follow-up needed
Milne Product	0	0	0	0	0	No	N/A
Northstar Oil	0	0	0	0	0	No	N/A
Northstar Gas	0	0	0	0	0	No	N/A

### Corrosion Rate Monitoring Program

The purpose of the corrosion rate monitoring program is to evaluate the efficacy of chemical corrosion inhibitors on known corrosion sites. BPXA did not identify any areas of concern during corrosion rate monitoring inspections conducted in 2010.

**Table 10: Corrosion Rate Monitoring Inspections**

Pipeline Leases	Inspections	Locations	Pipeline Grade			2011 Inspections Planned	Changes Noted/Comments
			A	B	C		
Badami Oil	35	35	13	15	7	Yes	No follow-up needed
Badami Utility	40	40	40	0	0	Yes	No follow-up needed
Endicott	32	16	16	0	0	Yes	No follow-up needed
Milne Oil	42	22	22	0	0	Yes	No follow-up needed
Milne Product	20	10	10	0	0	Yes	No follow-up needed
Northstar Oil	32	26	24	2	0	Yes	No follow-up needed
Northstar Gas	38	29	29	0	0	Yes	No follow-up needed

### Frequent Inspection Program

The BPXA frequent inspection program employs a more aggressive inspection cycle for locations with significant corrosion. None of the SPCO-jurisdictional pipelines qualify for the frequent inspection program.

### In-line Inspection Program and Schedule

Five of the seven BPXA-operated pipelines have established ILI programs. BPXA inspected each pipeline using a Baker Hughes high-resolution magnetic flux leakage (MFL) caliper combination tool.

The 2010 ILI report and schedule for Badami oil pipeline was unavailable at the time of publication.

BPXA completed field inspections in 2009 and 2010 on Milne Point oil and Endicott pipelines, respectively, based on ILI. BPXA determined that ILIs of Northstar pipelines in April of 2009 did not require a follow-up field inspection. BPXA plans to conduct ILIs of Endicott and Milne Point oil pipelines in 2011.

**Table 11: BPXA In-line Inspections**

Pipeline Lease	ILI Date	Tool	Immediate Concerns	Anomalies External/Internal	2010 Field Inspections	Next ILI
Badami Oil	10/7/10	MFL caliper	None	Under Review	None	2013
Badami Utility	N/A	N/A	N/A	N/A	N/A	Planning
Endicott	6/16/08	MFL caliper	0	35/0	3	2011
	7/22/08	MFL ultrasonic				
Milne Oil	6/3/08	MFL caliper	0	31/3	None	2011
Milne Product	N/A	N/A	N/A	N/A	N/A	N/A
Northstar Oil	4/7/09	MFL caliper	0	0	None	2012
Northstar Gas	4/3/09	MFL caliper	0	0	None	2012

BPXA defines below-grade pipeline as pipe that is encased, buried, passed through a vault or contained within a utility corridor. The Badami pipelines are mostly above-ground, but both pipelines have encased below-grade segments. BPXA inspected a section of Badami oil below-grade pipeline segment in 2010; results of the inspection were not available at the time of publication. BPXA will evaluate Badami utility pipeline’s four encased sections after it develops an ILI schedule.

Endicott pipeline passes through one vault and is cased in 19 locations. To date, BPXA has not identified any outstanding integrity issues with Endicott’s below-grade segments. BPXA will reevaluate the below-grade segments during the next ILI of Endicott.

Both of the Northstar pipelines have encased below-grade sections. ILIs conducted in 2009 allowed BPXA to evaluate four of six below-grade segments of Northstar gas pipeline and all below-grade segments of Northstar oil pipeline. BPXA did not identify any integrity concerns during the inspections. In 2010, BPXA inspected two vaults shared by the Northstar pipelines multiple times and did not detect any corrosion issues.

## Corrosion Under Insulation Program

The BPXA corrosion-under-insulation program evaluates the condition of insulated pipe through routine examinations. BPXA detected various levels of corrosion during inspections of Milne Point oil and Endicott pipelines. Milne Point oil had one site with grade B level corrosion that was successfully mitigated by BPXA. Corrosion was detected at 10 sites on Endicott pipeline; BPXA identified seven sites as grade B level corrosion, two as grade C and one as grade D. BPXA plans to conduct ILIs for Endicott and Milne Point oil pipelines in 2011 that may result in additional external mitigation.

**Table 12: BPXA Corrosion Under Insulation Inspections**

Pipeline	2010 Inspections	Changes Noted/Comments
Badami Oil	4	No anomalies to follow-up on for 2011; no internal inspection activity planned for 2011
Badami Utility	0	N/A - no insulation
Endicott	42	Ten areas of external corrosion detected; mitigation occurred on 8/20/10. Thirty-three baseline manual inspections performed. No anomalies to follow-up on in 2011; ILI planned for 2011 will include external inspection
Milne Oil	6	One site mitigated 2010; no follow up required
Milne Product	0	Out of Service
Northstar Oil	20	All 20 inspection results were new baseline inspections this year; no anomalies to follow-up on in 2011. No external inspection activity planned for 2011.
Northstar Gas	12	Nine new & three previous sites with no changes; no follow-up required

## Corrosion Monitoring Program

The BPXA corrosion monitoring program uses coupons and probes to evaluate the corrosiveness of product transported in pipelines. Milne Point oil pipeline has two corrosion monitoring sites; BPXA plans to add sites in 2011. Results of Milne Point oil pipeline coupon tests conducted in 2010 showed no excursions.

Northstar oil pipeline coupon sites, installed in 2008, indicated no notable corrosion or pitting. BPXA installed additional fittings in 2010, which showed no internal corrosion during the first exposure cycle.

BPXA installed additional corrosion coupon and probe fittings on Badami oil, Endicott and Northstar oil pipelines in 2010. BPXA installed four access fittings and weight-loss coupons in Badami oil pipeline; two upstream and two downstream of the pig launcher. Initial data results were not available at time of publication. BPXA installed access fittings, weight-loss coupons and probes at three locations along Endicott pipeline; one at the Endicott facility, one at the Badami pipeline tie-in location and one at TAPS PS1. The first coupon cycle did not produce any notable corrosion or pitting. BPXA also installed weight-loss coupons and probes on Milne Point oil and Northstar oil pipelines in 2010.

## **Cathodic Protection Program**

BPXA employs an annual cathodic protection program to manage external corrosion conditions in buried pipeline segments. For the Badami pipelines, buried sections include one road crossing and the Sagavanirktok, Kadleroshilik and Shaviovik river crossings. BPXA inspected the buried pipeline sections and the insulation flange installations. A report of the inspections is under review.

USDOT/PHMSA issued warning letters on September 21, 2010, for cathodic protection-related issues and associated insulation flanges on the Badami pipelines. According to BPXA, the USDOT/PHMSA warnings were acted upon and subsequently resolved.

BPXA inspected the cathodic protection system for the Northstar pipelines in September of 2010 and found that the system was performing to industry standards. BPXA also inspected Milne Point oil pipeline's electrical isolation between the stainless and carbon steel pipe sections and determined that the flanges were functioning effectively. Endicott pipeline is above-ground and does not require a cathodic protection system. BPXA plans to conduct its annual cathodic protection survey during third quarter 2011.

## **Other Programs**

### **Safety Program**

In 2010, BPXA incorporated control of work practices into the existing safety program. Control of work focuses on accountability, training, planning, task-based assessments and work permits. BPXA's safety approach applies to BPTA, BPXA and its contractors. Work permits are specific authorizations for breaking containment, confined space entries, energized electrical work, ground disturbance, hot work, lifting operations and unit work. Control of work processes include audits, lessons-learned reviews and stop-work authorizations.

BPXA uses task hazard analyses for routine activities. A task hazard analysis is a process by which tasks are evaluated for potential safety or environmental hazards and the appropriate protections are identified. BPXA utilizes authorizations-to-proceed for contracted work, projects and large maintenance activities. The BPXA operations supervisor, HSE (health, safety and environment) representative, contract project lead, project manager and job supervisor are all required to sign an authorization-to-proceed before beginning project work.

BPXA tracks safety observations and conversations with Tr@ction, BP's global reporting and management tool. BPXA recorded 59 safety observations and conversations relating to the Badami facilities in 2010, which is six fewer than the 2009 total. The Endicott facilities recording included 1,163 observations, an increase of 52 from the 2009 total. BPXA recorded 1,158 observations relating to the Milne Point facilities, a substantial drop from the 1,945 total observations recorded

in 2009. Northstar facility's 416 observations indicated an increase from the 255 observations recorded in 2009.

BPXA implements an employee monitoring program at its large facilities. The program focuses primarily on behavior-based observations and covers pipeline systems and related facilities. The program is referred to by various names, depending on the facility (ORCA at Endicott, BEST at Milne Point, STOP at Northstar – see Appendix A for a list of acronyms). Employee observations over the past several years show consistently robust programs with strong employee involvement. Employees of facilities associated with SPCO-jurisdictional pipeline systems recorded 1219 observations via the ORCA program at Endicott, 1673 via the BEST program at Milne and 1443 via the STOP program at Northstar.

The BPXA lessee annual reports provide information on the number of OSHA days away from work, OSHA recordable or major incidents and incidents which have the potential for loss. BPXA reports major or high potential incidents to the BP London group vice president within 24 hours.

In 2010, none of the facilities had a recordable OSHA incident. BPXA recorded a high potential incident at Northstar facility; a barge master and loader made contact when covering the subsea pipelines with gravel, but no injuries were sustained as a result of the incident.

### **Environmental Studies**

The BPXA environmental department has been, and continues to be, involved in multiple plant and animal studies on the North Slope. Studies that are directly relevant to the SPCO pipeline right-of-way leases and associated pipeline systems are included in the lessee annual reports.

### **Sagavanirktok River Weir Monitoring (Badami Pipelines)**

During 2010, BPXA carried out three inspections of the Sagavanirktok River weir, as mandated by the U.S. Corps of Engineers and ADF&G permits. The permits require inspections of weir conditions to determine its stability and efficiency until the permitting agencies determine that the site is stable.

Based on the 2010 inspections, BPXA determined that the weir was impounding water adequately and had performed well during the spring melt, with no apparent impact to the revegetation efforts performed in 2008 and 2009. An inspection by OASIS Environmental, Inc., in conjunction with the BPXA environmental studies group, formed the basis for the revegetation monitoring report. The revegetation report also referenced observations from an inspection performed in August of 2010, which noted vegetation growth on the seeded areas.

The revegetation monitoring report describes how the 1997-1998 winter construction of the underground river crossing for the Badami pipelines precipitated erosion at the site. The report also describes the efforts to control erosion and impound water

to pre-erosion levels, which resulted in the current weir design and revegetation. BPXA will continue summer inspections of the Sagavanirktok River weir site and provide the SPCO with inspection and rehabilitation progress reports.

### **Coastal Stability Monitoring (Northstar Shore Crossing)**

BPXA monitors erosion along the Northstar pipelines shoreline crossing on an annual basis. Historically, bluff erosion occurs at a rate of 1.6 feet per year; over the past year the rate has slowed to approximately 0.5 feet. The Northstar shoreline pad is 71 feet from the eroding bluff. BPXA does not plan to implement additional erosion control measures.

### **Rehabilitation Progress Report for Shore Crossing Landfall (Northstar Pipelines)**

BPXA has monitored the Northstar pipelines landfall location for 10 years. In 2004, erosion at the site led to the installation of an erosion control mat. BPXA installed a new erosion mat at the site in 2009, after the previous installation was lost during the preceding winter. In 2010, BPXA monitored the vegetation at the site and evaluated its erosion control measures. The 2010 report concluded that the new erosion control mat successfully prevented further erosion. Approximately 40% of the backfill area retained vegetation, 30% of the vegetation represents introduced grasses; 10% is composed of native grasses. Soil measurements showed that pH levels are consistent with measurements recorded in 2000, nitrogen levels are low and phosphorous levels, which had been high since 2002, dropped to the lowest level in recorded history. The 2010 rehabilitation progress report for shore crossing landfall recommended application of nitrogen and phosphorous fertilizer in 2011.

### **Northstar Pipeline Route Monitoring Program**

BPXA has monitored the subsea route of the Northstar pipelines for the past 11 years. The purpose of the monitoring is to acquire detailed bathymetric data, ice gouge and strudel drainage feature locations and characteristics of scour depressions.

BPXA's 2010 monitoring efforts identified subsidence affecting 13 areas between Northstar Production and Stump islands. Ten areas were identified in 2009 or previous monitoring years. The total length of subsidence, 10,330 feet, constitutes the most recorded in a single year. Subsidence in four areas reduced the backfill thickness, causing the locations to fall below the six-foot minimum. The deficit ranged from 0.1 to 0.8 feet, along sections ranging from two to 128 feet in length. BPXA added 2,900 cubic yards of gravel in 2009 to correct the deficiency.

BPXA identified ice gouging during its 2010 monitoring, occurring in water depths of 18 to 36.9 feet. The frequency and severity of the gouging was consistent with historical averages; depths ranged from 0.3 to 1.2 feet and widths ranged from four to 20 feet. Five of the 27 recorded gouges crossed the pipeline alignment; none of the gouges reduced the pipeline cover below six feet.

BPXA identified 22 Kuparuk River drainage features in 2010. During the eleven-year monitoring history, the number of drainage features identified within the 5,000-foot diameter corridor ranged from eight to 62, with an average of 30 per year. BPXA identified 30 new and three pre-existing circular strudel scours in 2010. None of the strudel scours occurred over the pipeline alignments.

**Table 13: 2010 Throughput**

Pipeline System	Product	2010 Gross Throughput	2010 Net Throughput	Reliability
Badami Oil	Oil	81,941 barrels	81,834 barrels	100%
Badami Utility	Gas	57,530 mscf	57,530 mscf	100%
Endicott	Oil	4,616,859 barrels	4,613,041 barrels	100%
Milne Oil	Oil	9,761,125 barrels	9,733,330 barrels	100%
Milne Product	NGL	out-of-service	out-of-service	N/A
Northstar Oil	Oil	6,133,803 barrels	6,133,516 barrels	100%
Northstar Gas	Gas	19,952,150 mscf	19,952,150 mscf	100%

## **2010 Operations and Maintenance**

The USDOT/PHMSA Advisory Bulletin, issued on June 28, 2010, in response to the Deepwater Horizon oil spill in the Gulf of Mexico, required operators of hazardous pipeline systems to review facility response plans within 30 days. BPXA responded on July 23, 2011, and followed-up with facility response plan questionnaires on September 23.

BPXA utilizes a computer maintenance system to manage recurring preventative maintenance tasks, thus ensuring a strict adherence to maintenance and inspection schedules.

BPXA performed pipeline lifts on Badami utility and Endicott pipelines in May of 2010, as part of the VSM leveling and adjustment projects. Endicott underwent pipeline lifts in April and August to verify ILI data acquired in 2008.

In 2010, BPXA corrected Endicott pipeline causeway bridge deficiencies (identified in 2009) and added two guard rails near Module 68 to protect Milne oil pipeline.

A construction project to install a new module to accommodate living quarters, office, shop and housing for an ARKTOS™ amphibious craft on the southeast end of Northstar Island continued in 2010, with anticipated completion in 2012. The project involved dredging over Northstar oil and gas pipelines and other activities within or near the Northstar rights-of-way. BPXA and its contractors will complete the modifications and installation by June of 2012.

## **Events**

On September 21, 2010, USDOT/PHMSA issued two warning letters and two notices of amendment for the Badami pipelines; BPTA was warned on issues relating to the cathodic protection system at insulation flanges and a design temperature issue. Badami utility pipeline was noticed for broken vibration dampeners and the atmospheric corrosion inspection. The notices of amendment were for Badami oil pipeline's corrosion control records and for inadequate updates to Badami utility pipeline's procedural manuals, alignment sheets and technical specifications. The issues were resolved with USDOT/PHMSA.

In December of 2010, two USDOT/PHMSA abnormal operating conditions occurred for the Badami pipeline systems. On December 27, BPXA lost communication to a remote terminal unit (RTU) emergency shutdown valve. BPXA investigated and found RTU-1 valve closed. Technicians opened the valve manually and mechanically isolated it in order to continue the investigation. BPXA determined that the communication gear fuse had failed and made the necessary repairs. On December 28, BPXA lost communication with RTU-3, which caused valve ESDV-1339 to close automatically. Technicians opened the valve manually and mechanically isolated the valve. The event resulted in a disruption of the system's leak detection capabilities, which prompted BPXA to report the situation to ADEC. ADEC requires operators to provide notification in the event that a significant change in leak detection occurs, thereby

causing the system to become non-compliant with ADEC regulations.

Milne Point oil pipeline incurred two minor incidents. The first incident occurred on January 6; a guard rail slipped while it was being repositioned following a rig move. No damage was caused to the pipeline system. The second incident occurred on June 23, when a ConocoPhillips Alaska, Inc., contractor backed into the stainless steel pipeline. The June 23 incident qualified as a USDOT/PHMSA abnormal operating condition. The BPXA control room diverted oil to a tank until an on-site inspection determined that the impact did not compromise the pipeline integrity.

A hazardous liquid release from a portable flare stack at RTU-3 occurred on October 7, 2010, while receiving the smart pig which BPXA sent through Badami oil pipeline. The release contaminated 20 square feet of gravel at the site. A hazardous liquid release occurred on the Endicott pipeline causeway on June 13, 2010, when a fuel truck rolled off the causeway, contaminating 80 - 100 cubic yards of gravel. On August 8, 2010, a box van made contact with Endicott pipeline insulation while making a sharp turn on a corner. BPXA recorded damage to the vertical support member near Module 303. Neither the insulation impact nor the VSM damage resulted in a loss of pipeline integrity.

Two pipelines, a 32-inch seawater treatment plant pipeline and a 24-inch gas pipeline, settled on Endicott pipeline, as noted in the WSS. BPXA responded by lifting and shimming both pipelines. BPXA plans to install a vertical support member as a permanent solution to the settling problem during the scheduled June 2011 shutdown.

A barge master and a loader made contact when covering the subsea Northstar oil and gas pipelines with gravel. No injuries were incurred during the incident. BPXA designated the event as a high potential incident and sent a report to the BP London Group Vice President within 24 hours.



# ConocoPhillips Alaska, Inc. Annual Report Summary

## Introduction to the lease and lessee reporting requirements

The 2010 Annual Comprehensive Report on Pipeline Activities comprises wide-ranging examinations of all CPAI-operated pipelines in Alaska. CPAI adheres to programs developed to prevent and reduce pipeline risks and hazards, for the purpose of ensuring pipeline integrity, performing work in a safe manner and adequately protecting Alaska's natural resources. The State of Alaska, through the pipeline right-of-way lease assigned to each CPAI pipeline, requires that the lessee track significant events and activities throughout the year and deliver a comprehensive report, no later than March 1, to the SPCO. SPCO compliance team members review each report according to a set of criteria generated from specific lease requirements (see Appendix X). The following sections provide a summary of the information provided in the CPAI 2010 Annual Comprehensive Report on Pipeline Activities.

## Description of lessee performance under the lease agreement

This section provides an overview of each CPAI-operated pipeline system and a summary of the information presented in the most-recent CPAI annual report. See Appendix X for a complete list of CPAI-operated pipelines and corresponding leases.

The pipeline companies that hold the leases to the Alpine, Kuparuk and Oliktok pipeline systems all contract with CPAI to operate their respective pipelines. Each pipeline company, together with CPAI, implements a number of programs that govern its operations and maintenance activities, including those activities associated with the pipeline right-of-way leases. Such activities include routine, preventative and corrective maintenance; program, plan and process reviews, and other procedures necessary to sustain pipeline integrity, thereby protecting the health and safety of people, wildlife and the natural environment.

**Table 14: Preventative Maintenance**

Maintenance Reviews	Alpine Pipelines	Kuparuk Pipelines	Oliktok Pipeline
Launcher/Receiver	√	√	√
Leak Detection	√	√	√
Meters/Provers	√	√	√
Over Pressure Protection	√	√	√
Valves	√	√	√
Tanks		√	
Corrosion Control	√	√	√
Bridges		√	√
Erosion		√	√
Fire Protection		√	√
Pipeline & Components	√	√	√
Roads and Pads	√	√	√
Wildlife	√		
Nuiqsut Natural Gas Pipeline	√		

**Table 15: Corrective Maintenance**

Maintenance Reviews	Alpine Pipelines	Kuparuk Pipelines	Oliktok Pipeline
Launcher/Receiver	√	√	√
Flow Meters	√	√	√
Leak Detection System		√	
Over Pressure Protection	√	√	√
Bridges	√	√	√
Pipeline & Components	√	√	√
Subsidence		√	
River Crossings	√		

In addition to the preventative and corrective maintenance program, plan and process reviews indicated in the above table, CPAI also conducted reviews of the following:

- Alcohol and drug testing compliance
- USDOT/PHMSA O&M program and process
- Operations manual and procedures
- SPCO annual reporting requirements
- USDOT/PHMSA annual reporting requirements
- Integrity management program
- Operator qualification program
- Security program
- Public awareness program
- USDOT/OPS personnel performance
- Oil discharge prevention and contingency plan

### **Assurance Programs**

A lessee’s quality assurance program (QAP), a requirement of most SPCO right-of-way leases, “defines the elements of a quality system necessary to satisfy right-of-way lease commitments, identifies what the system intends to accomplish and provides guidance for the development of contractor quality plans that define how expectations are fulfilled.” CPAI, as operator of multiple pipeline systems, is responsible for ensuring compliance with the QAP for each pipeline.

The QAP is just one of the assurance programs implemented by CPAI; other programs applicable to SPCO-jurisdictional pipelines are described throughout the annual report. CPAI conducted 16 assessments on CPAI assurance programs in 2010. CPAI reported that the following programs will continue without updates or revisions (see next page):

- Quality Management Program
- Waste Management Program

- HSE Management System
- Operations Business Recovery Plan
- Acquisition and Divestiture
- Process Safety Management
- Employee Participation Plan
- Public Awareness Program
- Contractor-developed Safety Programs
- Drug and Alcohol (substance abuse) Policy

The following programs underwent minor changes:

### **Operations Compliance Management System**

The CPAI review focused on drawings and maps (two findings), maintenance and record-keeping (eight findings). CPAI had resolved four of the 10 findings at the time of reporting.

### **Design and Construction, Process Hazard Analysis (PHA)**

The CPAI assessment focused on updating standards and processes in the PHA standard. CPAI introduced several updates to the PHA standard as a result of the assessment.

### **Management of Change**

CPAI focused on updating MOC operating procedures and identifying HSE issues. CPAI incorporated revisions to the MOC program and conducted training in order to adequately address each program change.

### **Operations and Maintenance, Integrity Management Program (IMP)**

The CPAI review focused on making moderate revisions to the IMP in order to meet regulatory requirements. CPAI clarified data processing requirements and updated the oil discharge prevention and contingency plan. CPAI also updated the accident reporting procedure (for electronic filing), high consequence area maps and databases (to reflect IMP jurisdictional boundary changes) and pipeline contact information.

### **Operations and Maintenance, Operator Qualification Program (OQ)**

CPAI, in order to clarify program requirements for operators, revised the OQ statement of commitment, table of contents and revision history in 2010.

### **Emergency Planning and Response, Emergency Action Plan (EAP)**

CPAI incorporated minor revisions into EAP manuals in 2010.

### **Risk Management, Health, Safety and Environmental Policies**

CPAI made revisions to several aspects of its HSE policies. Among other HSE concerns, CPAI conducted thorough reviews and instituted changes to its policies regarding hearing protection, asbestos management, blood-borne pathogens, radiation safety, respiratory protection, hazard communications, PPE and incident notification.

## Surveillance and Monitoring

Surveillance and monitoring efforts are designed to preserve pipeline integrity and the health and safety of personnel, wildlife and the natural environment. Frequent and consistent surveillance of the pipeline right-of-way and associated facilities can prevent or provide timely response to threats to pipeline system integrity. Surveillance activities include flying (visual and FLIR), driving and walking inspections. CPAI uses established inspection checklists and corrective maintenance procedures to conduct routine monitoring of its pipeline systems.

**Table 16: CPAI Monitoring Efforts**

Monitoring effort	Alpine pipelines	Kuparuk pipelines	Oliktok pipeline
Leak detection	X	X	X
Avian study	X	X	X
Wildlife study	X	X	X
Corrosion control	X	X	X
Below-grade casing inspection	X	X	X
Communication systems	X	X	X
Valve inspection	X	X	X
River & floodplain crossings	X	X	X
Module inspection	X	X	X
Right-of-way inspection	X	X	X

CPAI conducted numerous activities in 2010 in support of the lessee’s surveillance and monitoring program. In its annual report, CPAI describes the locations, reportable conditions, methods, number of occurrences and results of the surveillance and monitoring activities in 2010. CPAI included plant maintenance order numbers in the results and in the “changes” field of the matrix provided.

**Table 17: CPAI Surveillance Inspections**

Surveillance method	Alpine pipelines	Kuparuk pipelines	Oliktok pipeline
Aerial	140	266	130
Visual	98	166	80
FLIR	42	100	50
Driving	0	> 26	> 26
Annual ground inspection	1	1	1

In addition to conducting activities represented in the table above, CPAI also performed multiple other tasks to satisfy lease requirements, including (but not limited to): submitting rental payments and workers compensation notice of insurance forms, adhering to rental adjustments and appraisals, confirming the percentage of local hiring, providing notification of transfers of interest and facilitating or allowing for participation in training courses for employees.

## **Other Risk Management Programs**

In 2010, CPAI updated its oil and hazardous substance discharges, prevention and response plan after reviewing the most-recent edition of the Alaska Clean Seas Technical Manual. ADEC approved the revised CPAI plan for the Alpine pipelines and validated through April 2011. ADEC also approved CPAI's certificate of proof of financial responsibility to respond to spill damages.

## **Safety Programs**

The Alaska OSHA office reviewed program elements of the Alpine pipelines safety and health management system. The program elements were found to be consistent with high quality at the STAR level; OSHA will conduct another review in 2015. There were no reportable safety incidents for any of the CPAI-operated pipelines in 2010; however, CPAI recorded 6,060 "proactive measures," which include 2,054 audits, near-misses and hazard identifications and 4,006 behavioral observations.

Publishers of the Alaska Safety Handbook produced an updated edition in 2010 to reflect updated CPAI safety procedures and standardize them for consistency with other North Slope operators' programs.

**Table 18: Reliability, Throughput, Construction and Shutdown or Slowdown Information**

	Alpine Oil	Alpine Utility	Alpine Diesel	KPL	KPE	OPL
Throughput	32,953,717	39,008,416	4,562,265 gallons per year of arctic heating fuel + five mineral oil shipments	256,000 barrels per day	164,000 barrels per day	6,337,985
Reliability	99.94%	99.51%	100%	100%	100%	89%
<b>Shutdowns</b>						
Planned	2	3	0	2	2	1
Unplanned	3	9	0	1	1	0
<b>Pigging</b>						
Maintenance	13	30	10	12	4 + 1 gauge	5 + 1 gauge
ILI	0	0	0	0	1	1
Construction	None	None	None	Replaced Smith Creek Bridge and 16" pipeline connection	Replaced 12" pipeline	Pig launcher/receiver retrofit w/ ILI run

CPAI operated each pipeline system within the maximum operating pressures and daily design limits.

**System Modifications and Improvements**

CPAI is upgrading its leak detection systems to incorporate the best available technology. CPAI completed long range planning for low flow and analyzed the risks associated with water drop-out, wax deposit and viscosity.

**Public Awareness**

On November 2, 2010, CPAI sent a copy of the Hazardous Liquids Pipeline Guide for Emergency and Public Offices to each NSB official. The intent of providing the guides was to familiarize the NSB officials with the CPAI-operated pipeline systems located near North Slope communities. The guide emphasizes safety through prevention, emergency response programs, pollution control, pipeline releases and pipeline and product identification. The guide also provides a comprehensive list of emergency contacts.

**Terminations**

CPAI did not conduct any termination activities in 2010 and none are planned or anticipated in 2011.

**Oil and Hazardous Substance Discharges**

There were no discharges in CPAI-operated pipeline rights-of-way in 2010. CPAI did not perform any spill drills in 2010. Other notable events are displayed in Table 20.

**Table 19: CPAI 2010 Events**

Events	Alpine Oil	Alpine Utility	Alpine Diesel	KPL	KPE	OPL
FLIR out-of-service	22 days	22 days	22 days	22 days	22 days	22 days
Safety Related Conditions	0	0	0	0	0	0
Vehicle Related Incidents	0	0	1	7	7	5
Big Equipment Incidents	0	0	0	0	1	0
Power Supply Incidents	1	1	1	0	0	0
Seawater Treatment Plant Incidents*	1	3	0	0	0	0

*\*Seawater treatment plant incidents shut down the Alpine Utility pipeline, which transports seawater from the plant at Kugaruk to Alpine.*

## Kenai Kachemak Pipeline Annual Report Summary

On February 18, 2011, Marathon PipeLine Co., LLC, submitted to the SPCO the Kenai Kachemak Pipeline 2010 Annual Report. The SPCO reviewed the report and found it to be compliant with the right-of-way lease annual reporting requirement.

Stipulation 1.14 of the SPCO right-of-way lease requires each lessee to provide an annual report that clearly communicates the state of the pipeline system. Lessee annual reports contain valuable information about the pipeline and related facilities and are thoroughly reviewed by the SPCO for accuracy and clarity.

The summary below provides an overview of significant KKPL activities, including Marathon's participation in the One-Call Program; corrosion, cathodic protection and surveillance and monitoring inspections.

### **Lessee Performance under the Lease**

Throughout 2010, Marathon PipeLine Co., LLC, upheld the terms of the right-of-way lease for KKPL, adhering to all lease requirements, stipulations, conditions and limitations.

### **Surveillance and monitoring**

#### **Aerial and Ground Surveillance**

Marathon conducted 33 aerial surveillance inspections of the KKPL right-of-way in 2010. KKPL technicians routinely check the pipeline and right-of-way for encroachments, construction activities, and unauthorized actions and other changes in the condition of the right-of-way. Marathon conducts weekly aerial surveillance inspections from April to October, weather permitting. In the winter months, Marathon conducts monthly aerial surveillance inspections due to inclement weather conditions and the reduced likelihood of third-party damage. KKPL observers reported no significant findings during 2010 surveillance inspections.

In addition to aerial surveillance inspections, MPL employees monitored the KKPL right-of-way while conducting routine operations and maintenance activities. MPL trains its employees to look for erosion, improperly-placed pipeline markers and other right-of-way conditions that could be detrimental to the pipeline system.

### **Risk Management Programs**

#### **Corrosion Protection**

To minimize the potential for internal corrosion, the operator frequently samples the gas for quality, H<sub>2</sub>S (hydrogen sulfide) and water content, per the requirements of 49 CFR 192.475 and 49 CFR 192.477, and includes testing data in its annual report. Data collected from the pipeline's origin, the gas production pads supplying the pipeline

along the right-of-way and at the terminus indicate that corrosive gas is not being transported in KKPL. The gas content was reported as consistently greater than 99% methane. Hydrogen sulfide is minimal and ranged from 0-0.2 parts per million.

### **Cathodic Protection**

The operator inspects cathodic protection rectifiers a minimum of six times annually, with intervals between inspections not exceeding two and a half months. MPL inspected two KKPL rectifiers 13 times in 2010. As part of the cathodic protection program, MPL conducts an annual pipe-to-soil survey and records corrosion coupon readings from four locations along KKPL on a regular basis. In July of 2010, the operator completed a survey that comprised 205 pipe-to-soil tests. Of the 205 tests performed, only one test point yielded a reading outside of the acceptable range. MPL believes the unacceptable reading may be erroneous and will conduct a follow-up test in 2011.

### **Valve Inspection and Repair**

MPL personnel conducted KKPL inspections and required maintenance in June and July of 2010, pursuant to 49 CFR part 192, subpart M. MPL's objective in conducting the inspections and maintenance activities was to ensure that the valves are readily accessible and operable in the event that the pipeline would need to be shut down in an emergency situation. The operator maintains valve records at the MPL Kenai office.

### **Pressure Relief Devices and Regulating Stations**

On June 14, 2010, pursuant to 49 CFR part 192, subpart M, MPL personnel conducted KKPL relief device and pressure-regulating station inspections and testing. The operator noted no deficiencies on any of the relief devices or pressure-regulating stations included in the inspection. The operator maintains relief device and pressure-regulating station records at the MPL Kenai office.

### **Leak Surveys**

MPL conducted on-ground leakage surveys of KKPL using leak detector equipment in February and again in July 2010. Surveyors discovered two leaks during the February survey, one near the pig trap at the KKPL terminus and another near an underground vault on the Susan Dionne lateral. MPL detected no leaks during the July survey. Neither leak detected during the February survey presented any hazard to the public, property or environment.

### **Safety Programs**

MPL employee and contractor safety performance in 2010 involved one OSHA-recordable injury and no preventable motor vehicle accidents. The OSHA-recordable injury was attributed to a MPL employee; however, the incident did not occur on or near the KKPL right-of-way.

MPL utilized contractor services to support KKPL operations. There were no known

injuries incurred by contract personnel in 2010. There were no known injuries associated with the KKPL system sustained by members of the public in 2010.

In June of 2010, the MPL president announced a new strategic program built around the theme “We Deliver By Being **BEST**,” with the term “**BEST**” representing an acronym of the following concepts:

- **B**usiness Focused
  - Manage costs
  - Capture and use information to improve
  - Engage with stakeholders
  - Invest for the future
  
- **E**xcellent Operations
  - Spill not one drop
  - Comply with regulations
  - Perform appropriate inspections, repairs and upgrades
  - Deliver quality product
  
- **S**afety Always
  - Any injury or accident can be prevented
  - Safety will not be sacrificed for any other goal
  - Safety is everyone’s responsibility. Everyone looks out for each other.
  - Safety policy will be followed.
  
- **T**eam
  - Ethics and integrity beyond reproach
  - Trained and knowledgeable in our skills and business
  - Develop and follow processes and procedures
  - Accountable for our actions

This concept was not intended to replace any existing philosophy or initiatives, but rather to link the organization’s strategic direction with employee goals.

As part of its public safety efforts, the operator participates in the Alaska Dig Line Inc. one-call damage prevention program. The One-Call program is important to the community for the prevention of third-party pipeline damage that could threaten public safety. There were 206 locate requests in 2010, which resulted in 24 on-site locates and 11 high-pressure standbys. In contrast to 2009, DigLine Notifications were down nearly 12 percent in 2010; On-Site Locates were down nearly 58 percent; and High-Pressure Standbys were down by 54 percent.

### **Hazardous Substances Discharge**

There were no discharges of oil or other hazardous substances by MPL on the KKPL right-of-way during 2010.

## Throughput and Pigging

KKPL, LLC, reported pipeline throughput and pigging activities in their 2009 annual report. This information is summarized in Table 21. Throughput for all of the SPCO jurisdictional pipelines can be found in Appendix I.

**Table 20: Throughput and Pigging Information**

Pipeline System	2010 Throughput	Maximum Operating Pressure (MOP)	Maintenance Pigging	Pipeline Operator
KKPL	14,209 mmcf (14.2 bcf)	1,480 psig	No schedule	Marathon Pipe Line

## Nikiski Alaska Pipeline Annual Report Summary

On February 23, 2011, Tesoro Alaska Pipeline Co. submitted to the SPCO the 2010 Annual Comprehensive Report on Pipeline Activities and State of the Pipeline System for Tesoro Alaska Pipeline Company (Nikiski) Right-of-Way Lease - ADL 69354. This section of the SPCO annual report contains highlights of the Nikiski Alaska Pipeline annual report.

### **Lessee Performance under the Lease**

Tesoro upheld the terms of the right-of-way lease for Nikiski Alaska Pipeline (NAP) and adhered to all lease stipulations, reservations, conditions and limitations.

### **Surveillance and Monitoring**

#### **Brushing**

In 2010, the NAP operator cleared brush and vegetation between PLMPs 16 and 46 and in several Anchorage station areas. Pipeline operators typically clear brush from the pipeline right-of-way to facilitate surveillance and monitoring activities and leak detection efforts. Tesoro performed the brushing within five feet of the pipeline centerline; the activity did not result in any negative impacts to the right-of-way or pipeline system.

#### **Right-of-Way Inspections**

Tesoro performs a right-of-way inspection a minimum of 26 times annually. The operator conducts flying, driving and walking surveillance inspections between the Tesoro Refinery in Kenai and the Port of Anchorage. The operator will, on occasion, inspect specific segments of the Nikiski Alaska Pipeline before and after maintenance work. Tesoro reported in its annual report that it conducted 52 aerial inspections of the right-of-way and 47 ground surveillances in 2010. The operator did not find any deficiencies during the inspections.

#### **Navigable Water Crossing Inspections**

Tesoro inspects the sub-sea pipeline crossing under the Turnagain Arm once every five years. The most-recent survey, conducted in 2006 by ETRAC Engineering, LLC, showed no threats to the submerged pipeline. Tesoro scheduled the next sub-sea inspection for 2011.

### **Risk Management Programs**

#### **Operations and Maintenance Manual**

Federal regulations require Tesoro to maintain and conduct annual reviews of a written operations and maintenance manual. The goal of the annual review is to ensure that the operator's written procedures align with those conducted in the field and satisfy regulatory obligations. Tesoro conducted a review and subsequently revised its operations and maintenance manual in January of 2011.

### **Integrity Management Program**

Tesoro's IMP represents the operator's commitment to ensure the integrity of its pipelines. Pursuant to the IMP, the last ILI of the Nikiski Alaska Pipeline was conducted in December of 2010.

USDOT/PHMSA conducted an audit of Tesoro's IMP in October of 2010; the audit resulted in no negative findings.

### **In-Line Inspection Information**

Tesoro conducted an ILI of the Nikiski Alaska Pipeline in December of 2010. The lessee did not have the results of the inspection at the time of reporting, but the SPCO compliance team reported that the inspection findings resulted in two excavations and corresponding integrity investigations in 2011.

### **Corrosion Management**

Tesoro recorded rectifier readings monthly and completed its annual cathodic protection survey during June and July of 2010. The survey consisted of field testing, minor test station repairs and visual examinations. The 2010 Annual Cathodic Protection Survey contained eight recommendations for adjustments and maintenance. Tesoro inspected Nikiski Alaska Pipeline with a smart pig in December of 2010.

### **Cathodic Protection**

The underground portions of the Tesoro pipeline are protected from external corrosion by an impressed-current cathodic protection system. To determine whether the level of protection is adequate to comply with federal regulations, Tesoro inspects and tests the system annually. Tesoro's 2010 survey provided recommendations for cathodic protection adjustments and maintenance; the list below includes the detailed recommendations and subsequent actions to maintain or improve the Nikiski Alaska Pipeline system.

Recommendations:

1. Isolate the ASIG lateral from the ASIG Tank Farm  
2010 Action: The isolation kit for the ASIG lateral was installed in September 2010 and is effective.
2. Assist in the interruption of all rectifiers while performing annual surveys, install a permanent GPS synchronized current interrupter in all of the existing rectifiers  
2010 Action: This recommendation is being reviewed by Tesoro; GPS interrupters are not required.
3. Install the new groundbed at Captain Cook State Park  
2011 Action: A new groundbed was installed in March of 2011.

4. Perform additional testing at TS-52B, TS-52C, TS-52D and TS-53 along Northern Lights Boulevard and TS-4 on the ASIG lateral to investigate the cause of the depressed potentials in this area.

2011 Action: Testing is scheduled to be completed prior to the 2011 annual survey.

5. Replace TS-56 with a coupon test station

2011 Action: Replacement of this test station is scheduled prior to the 2011 annual survey.

6. Initiate planning for performing a cathodic protection survey across the Inlet on the submerged portion of the pipeline between the Anchorage and Kenai sides

2012 Action: Planning is underway to complete this survey in 2012.

7. Continue performing and recording monthly rectifier readings

2011 Action: Ongoing

8. Continue performing and recording annual cathodic protection surveys

2011 Action: Ongoing

### **Nikiski Alaska Pipeline Cathodic Protection System Activities**

New coupon test stations were installed at TS-54A (north of MLV-9) and TS-54B (south of Westchester Lagoon). A coupon test station was replaced at 52B (west of McKenzie, south side of Northern Lights Boulevard). A new isolation flange was installed at the Anchorage Terminal. Isolation testing confirmed that the pre-existing short has been removed. Bolt isolation washers were removed on the flanges at MLV-7 and MLV-8. The washers were removed to facilitate cathodic protection current flow in these areas. The bolts where the washers were removed were painted green to indicate the isolation washer had been removed.

## **Impacts/Responses to Integrity, Environment and Safety**

### **Abnormal Operating Conditions**

USDOT 49 CFR 195.402(d) defines abnormal operating conditions as events that exceed design limits, such as unintended valve closures, system shutdown, pressures or flow rates outside normal operating limits, loss of communications or operation of a safety device. Tesoro recorded 10 abnormal operating conditions in 2010 (see Table 22). The operator investigated every abnormal operating condition and verified each as a routine equipment switch error, with no operating limits being exceeded. Tesoro is actively pursuing a resolution to this problem.

**Table 21: Summary of 2010 Abnormal Operating Conditions**

Date	Abnormal Operating Condition Description	Status
3/27/10	MLV-5 communication failure	cleared
4/6/10	MLV-5 communication failure	cleared
5/15/10	Low nitrogen pressure to MLV-5 actuator; repaired	cleared
6/11/10	TAPL flow control valve would not operate; replaced	cleared
6/26/10	MLV-4 communication failure	cleared
7/11/10	ASIG communication alarm & barrel discrepancy – meters stopped counting – pipeline shutdown until communications restored	cleared
11/10/10	MLV-2 & 3 communication failure	cleared
11/27/10	MLV-4 communication failure	cleared
12/14/10	TAPL zero flow rate and pressure increasing – pipeline shutdown until the ASIG operator valve closure error was corrected and retraining was scheduled	cleared
12/25/10	MLV-2 communication failure	cleared

### **One-Call Notifications**

Tesoro participates in the One-Call damage prevention program through Alaska Digline. Notifications of excavation work being performed near the pipeline were sent to Tesoro for evaluation. There were 598 one-calls regarding dig activities in the vicinity of the Nikiski Alaska Pipeline in 2010; 127 originated in the Anchorage area and 471 originated in the Kenai area. There was no outside force damage to the pipeline in 2010.

### **Valve Maintenance**

Tesoro inspects and maintains the nine mainline block valves twice each calendar year, not exceeding 7.5 months between inspections. These inspections ensure that valves are in working order and functioning properly. All the valves were inspected two times in 2010, none of which required maintenance.

### **Summary of Discharges**

Tesoro records all oil and hazardous substance discharges within its logistics incident database. An incident report is compiled to document the release date, substance, quantity, location, cause and cleanup actions. No oil or hazardous substance discharges occurred along the Nikiski Alaska Pipeline right-of-way in 2010.

### **Throughput, Reliability and Pigging**

The Nikiski Alaska Pipeline transports a number of different products including aircraft fuel (Jet-A), unleaded gasoline, premium unleaded gasoline, and two types of ultra-low-sulfur diesel. Table 23 breaks down throughput for each product transported in 2010. The products are transported to the Port of Anchorage where they are used at Elmendorf Air Force Base, Ted Stevens Anchorage International Airport or transported for use at gas stations. The products are transported through the pipe in batches to prevent cross contamination. Tesoro reported reliability for the pipeline at 99.97% for 2010.

**Table 22: 2010 Refined Product Throughput**

Product	2010 Throughput
Jet-A	6,928,430 barrels
Unleaded Gasoline	3,540,518 barrels
Premium Unleaded Gasoline	583,464 barrels
Ultra-Low-Sulfur Diesel (ULSD)#1	1,458,589 barrels
ULSD #2	642,248 barrels
Total	13,153,249 barrels

**Table 23: 2010 Throughput, Reliability and Pigging Information**

Pipeline System	2010 Throughput	Reliability	Maintenance Pigging	Last Smart Pig Run
Nikiski Alaska	13,153,249 barrels	99.97%	No schedule	December 2010

## Nuiqsut Natural Gas Pipeline

### **Introduction to the Lease and Lease Reporting Requirements**

NSB submitted its 2010 Annual Comprehensive Report on Pipeline Activities and the State of the Pipeline System on March 1, 2011. The annual report is a requirement of the right-of-way lease and is meant to provide a comprehensive overview of the state of the NNGP pipeline system. The SPCO compliance staff thoroughly reviews each report to get a comprehensive understanding of significant events and overall pipeline status. The following sections include highlights from the NSB report on NNGP.

### **Covenants**

NSB provides liability and property damage insurance and recognizes its responsibility, under the terms of the right-of-way lease, to the State for damages or injuries incurred by the State as a result of pipeline activities. NSB maintains and makes available all records relating to the operation and maintenance of NNGP. The NNGP annual report provided adequate information regarding leasehold activities, including pipeline operator surveillance reports, a cathodic protection assessment and ultrasonic testing results from areas of the NNGP with failed pipeline coating.

## **Section I. General Stipulations**

### **Communications**

The NNGP gas receiving, distribution and conditioning operations are electronically monitored from the Alpine production pad. Alpine is the source of NNGP natural gas, which supplies more than 400 residents in the village of Nuiqsut. The NNGP operator relies on the electronic monitoring and communication, facilitated by the programmable logic controller, at Alpine to relay information and, in the event of a failure, initiate emergency shutdown of the pressure-reducing valve, which would interrupt the flow of gas to the distribution system.

### **Quality Assurance**

The SPCO is in the process of reviewing the revised NNGP quality assurance program (QAP). NSB will conduct all NNGP operations and maintenance according to the assurance programs outlined in the NNGP operations, maintenance and operator qualifications (OM&OQ) manual and the 2008 QAP until the SPCO formally accepts the 2010 QAP.

### **Conduct of Operations and Surveillance and Monitoring Program**

NNGP is operating under the SPCO-accepted design criteria; NSB has not introduced any changes to the design criteria or its surveillance and monitoring program.

NSB conducted numerous NNGP surveillance and monitoring program inspections in 2010. Specifically, the operator's surveillance and monitoring efforts involved the

Nigliq Channel crossing, multiple valves and pads along the pipeline, areas of possible frost heave and thaw settlement, pipeline movements, survey monument placement, fire hazards, corrosion, state land restoration and rehabilitation, fish and wildlife protection, public safety and right-of-way access and areas of restricted activity during pipeline maintenance projects. NSB confirmed that the leasehold is not being utilized to store equipment, hazardous waste, tools or machinery.

## **Section II. Environmental**

NSB provided permit compliance manuals and project documents to contractors performing pipeline activities on its behalf. NSB, through the manuals and documents, informed contractors of environmental permit and lease requirements relating to work conducted in the pipeline right-of-way. In 2010, NSB and its contractors successfully conducted operations and maintenance activities without altering the natural surface or ground water temperatures; aggravating soils; accelerating erosion or sedimentation along the Nigliq Channel banks; disturbing surface areas, fish spawning beds, rearing and overwintering areas or cultural resource sites or blocking fish passage or wildlife movement.

## **Section III. Technical Pipeline System Standards**

State and federal regulations require the lessee to conduct pipeline activities in accordance with sound engineering practices and design criteria. In the NSB annual report for NNGP, the lessee states that the pipeline design is in conformance with all relevant standards and no modifications to the pipeline or related procedures were made in 2010. Cathodic protection provides adequate corrosion control and routine corrosion inspections were conducted in accordance with USDOT/PHMSA 49CFR192 requirements.

### **Program Actions, Cumulative Changes, Results and Proposed Actions**

NNGP programs (see Appendix X for program definitions) ensure that NSB operates and maintains the pipeline to state and federal standards. The following sections include any changes to programs, results of the changes and proposed actions.

### **Assurance Programs**

NSB revised the NNGP QAP and in 2010 submitted an updated version to the SPCO for review. Changes in the program reflect actual pipeline conditions and provide a framework for the NNGP operations, maintenance and qualifications manual, which must satisfy the specific QAP commitments and expectations.

### **Surveillance and Monitoring**

NSB did not make changes to the NNGP surveillance and monitoring program in 2010. The NNGP operator continues to satisfy SPCO lease requirements.

In 2010 NSB conducted frequent surveillance inspections on the NNGP system and right-of-way and reported no significant findings. NSB also conducted a visual inspection of NNGP for potential leaks in areas with damaged coating. NSB did not discover any leaks or evidence of atmospheric corrosion in the areas with damaged coating. In areas where water can infiltrate, NSB plans to remove the damaged coating to avoid external pipeline corrosion. NSB will complete the pipe-casing installation at the Colville River crossing in 2011.

The lessee conducted cathodic protection system and ultrasonic testing in 2010. After reviewing the test results, NSB made plans to replace failed lead wires at cathodic protection test stations two and three, as well as at the head and terminal boards at test station six.

The lessee inspected the NNGP Nigliq Channel crossing for erosion and bank degradation. The NSB also took the opportunity to establish a baseline survey for future gas leak monitoring efforts during the inspection. NSB did not discover any leaks during the 2010 inspection; however, inspectors reported some pipeline trench erosion on the east entrance to the Nigliq Channel. The NNGP operator was particularly concerned about a section of abandoned pipe that had risen to the water surface. The operator marked the area with buoys and notified Nuiqsut residents of the navigation hazard. In 2011, NSB plans to fill the centerline trenches and seed the area with native vegetation to prevent further erosion in the area.

The lessee inspected the below-ground portion of NNGP – paying special attention to backfill conditions, trench maintenance and leak detection. NSB found no indications of trench subsidence, heaving or leaks. The operator will replace missing or broken delineators in the summer of 2011.

### **Monitoring**

NSB's NNGP monitoring efforts involve routine gas stream analyses. In 2010, the operator detected increased levels of H<sub>2</sub>S in the gas stream and developed a corrective action plan to address the situation. The operator will prepare and utilize a project analysis report that defines the maximum-allowable level of H<sub>2</sub>S in the gas stream. The operator will also develop interim and long-term solutions for the increasing H<sub>2</sub>S levels. NSB will implement the interim solutions immediately, utilizing existing equipment to curtail the rising H<sub>2</sub>S levels. NSB is looking for a long-term and feasible commercial process to remove H<sub>2</sub>S from the gas stream.

### **Self Assessment**

The NNGP operator is responsible for regularly-conducted assessments of its OM&OQ practices and procedures. Self-assessments are reviewed by the NNGP project administrator and UMIAQ (formerly LCMF) engineers. In a 2010 OM&OQ assessment, the reviewers found the OM&OQ to be inconsistent with the quality assurance program and current operating conditions. NSB plans to incorporate changes and corrections recommended by the reviewers and produce an updated version of the

OM&OQ in 2011.

### **Internal Evaluation**

To ensure compliance with local, borough, state and federal regulations, NSB performed an internal evaluation of the pipeline system documents that direct NNGP operations in 2010. The evaluation team found that both the QAP and OM&OQ were inconsistent in several areas with the actual pipeline system and operating strategy. NSB plans to update the materials and, to ensure the manuals are consistent with a realistic operating plan while meeting regulatory obligations, conduct another internal evaluation in late 2011.

### **Risk Management Program**

NSB reviewed the NNGP risk management programs and plans to incorporate changes to reflect the day-to-day operating conditions. NSB's stated goal is to provide a risk management program for NNGP that is both effective and acceptable to regulatory authorities.

### **Safety Programs**

NSB mitigates worker and public safety impacts with employee training and the use of PPE. To date, no lost-time accidents or medical emergencies have occurred within the NNGP leasehold.

### **Construction, Operation, Maintenance and Termination**

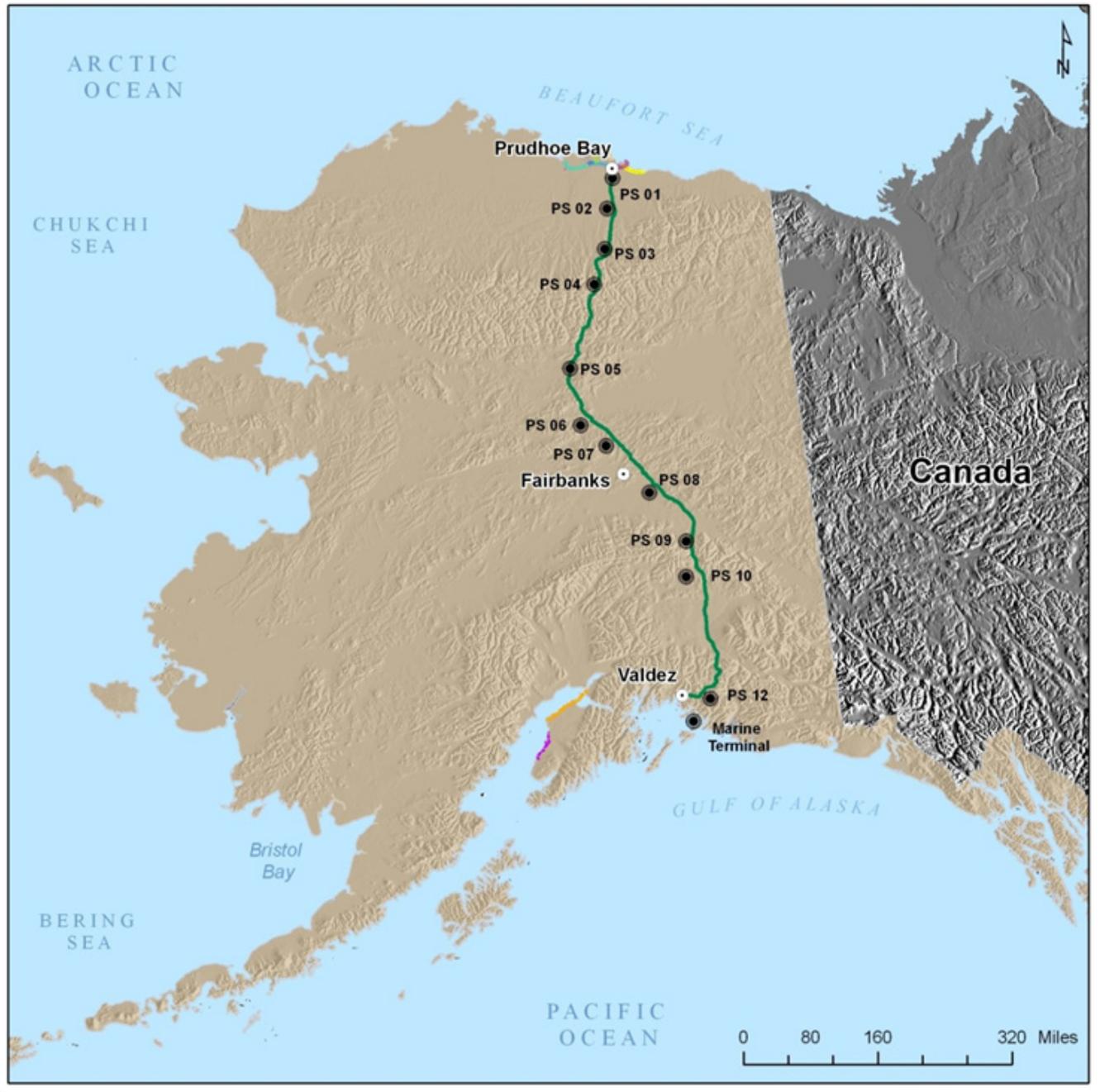
The NNGP design uses continuous electrical resistance welded coiled pipe, which allows for a maximum operating pressure of 1,440 psig. The pipeline is designed to provide for a maximum flow rate of 3,500,000 standard cubic feet of natural gas per day. NSB reported an average daily throughput of 250,000 standard cubic feet of natural gas at an average pressure of 600 psi.

In 2008, NSB ran a maintenance pig through NNGP, launching the tool from the Alpine production pad. New technology will allow NSB to use smart-pigs to conduct ILIs of NNGP; the operator is developing a smart-pigging project to commence in 2012. NSB will conduct another maintenance pig operation prior to the smart pig ILI.

### **Events**

NSB reported no spills or leaks in 2010. Spill and leak reporting procedures are included in the NNGP OM&OQ.

## TAPS Annual Report Summaries



APSC submitted the TAPS 2010 Integrity Management Program Annual Reports during the summer of 2011. Commonly referred to as the MP-166 reports, the integrity managements reports are:

- Mainline Aboveground Support Systems and Bridges Monitoring Program Report
- Fuel Gas Line Monitoring Report
- Mainline Integrity Monitoring Report
- Pipeline and Valdez Marine Terminal Corrosion Monitoring Report
- Rivers, Floodplains, and Glacier Monitoring Program
- Right-of-Way and Facilities Civil Monitoring Program

- Aboveground Storage and Tank Monitoring Program
- Valve Monitoring Report

The MP-166 reports are produced to provide an annual update of the state of the pipeline and pipeline system. The SPCO reviews each report and, as a service to our readers, provides brief summaries in the following section.

### **Mainline Aboveground Support System and Bridges Report Summary**

The APSC aboveground monitoring program consists of the mainline support system and bridges program and a slope stability component of the right-of-way and the facilities civil monitoring program. The aboveground monitoring program operates using information about the condition of the aboveground pipeline and bridge assets accumulated from a variety of sources by the APSC integrity management team.

Content for the report is gathered from routine monitoring and maintenance activities, periodic right-of-way surveillance inspections performed by the P&CM and response base supervisors, annual line-walks, site-specific surveys and monitoring activities as well as casual observations. The integrity management team may, based on the collected information, prioritize maintenance and repair activities.

The APSC aboveground support system and bridges program report stated that nearly all of the routine monitoring and maintenance recommended in 2009 was completed, but the operator fell short on several programs due to staffing shortages. In the report APSC ranked the overall performance of the TAPS mainline support system and bridges as adequate, based on the current management of the programs.

The aboveground program report provided detailed descriptions of the mainline aboveground program activities in subsections, based on whether the activities involve monitoring, maintenance, or self-assessment.

### **Monitoring Conducted in 2010**

As part of the aboveground program report, APSC provided details about monitoring activities. Below is a brief summary of several of those activities as described by APSC in the aboveground program report:

- TAPS heat pipes are analyzed by APSC on a three-year cycle. In 2010, APSC reported that a FLIR photographic analysis was performed on approximately 41,500 heat pipes (approximately 33% of total heat pipes). The 2010 FLIR analysis included 10,100 bents, anchors and other supports along the pipeline right-of-way.
- Mainline support system monitoring in 2010 was composed of an anchor position assessment, wildfire damage surveillance and the annual comprehensive line-walk. The line-walk inventoried the hardware components of each bent to reconcile discrepancies in the APSC engineering database management system.

- The site-specific geotechnical and structural analysis in 2009 included annual geotechnical monitoring, laser scan surveys for slope stability, biennial slope monitoring, VSM thermal stability data, insulation system monitoring and an assessment of the remote gate valve 118 avalanche diversion structure.

Annual geotechnical monitoring involves slope stability monitoring at seven specific slopes along TAPS. APSC reported that conditions at the seven slopes had no major new problems; however, soil instability at these slopes continues to displace and tilt many of the VSMS. No practical measures have been identified to arrest the soil movement. Frequent routine maintenance and periodic major maintenance will be required during the life of the pipeline to ensure the pipeline remains within operational parameters.

Remote gate valve 118 avalanche diversion structure continues to jack in the horizontal direction and is beginning to lean outwards. Laser scans were conducted in 2009 and 2010, but no comparison of the scans has been completed. No plan for future monitoring has been compiled.

Insulation monitoring along TAPS is performed (per MP-166-2.03) and requires moisture monitoring and physical conditions. No specific maintenance was targeted for the insulation system in 2010. The insulation system continues to degrade at an unknown rate. In an effort to determine the degradation to the insulation, two instrumented test sites have been installed at Shaw Creek PLMPs 517.46, 523.10 and 530.68 and another at Glennallen PLMPs 653.87, 669.54 and 684.21.

- Pipeline and vehicle bridges inspections included in the 2010 aboveground program report contained information about pipeline bridge engineering inspections, vehicle bridge engineering inspections, annual bridge maintenance inspection and multi-plate aboveground pipeline road crossing review.

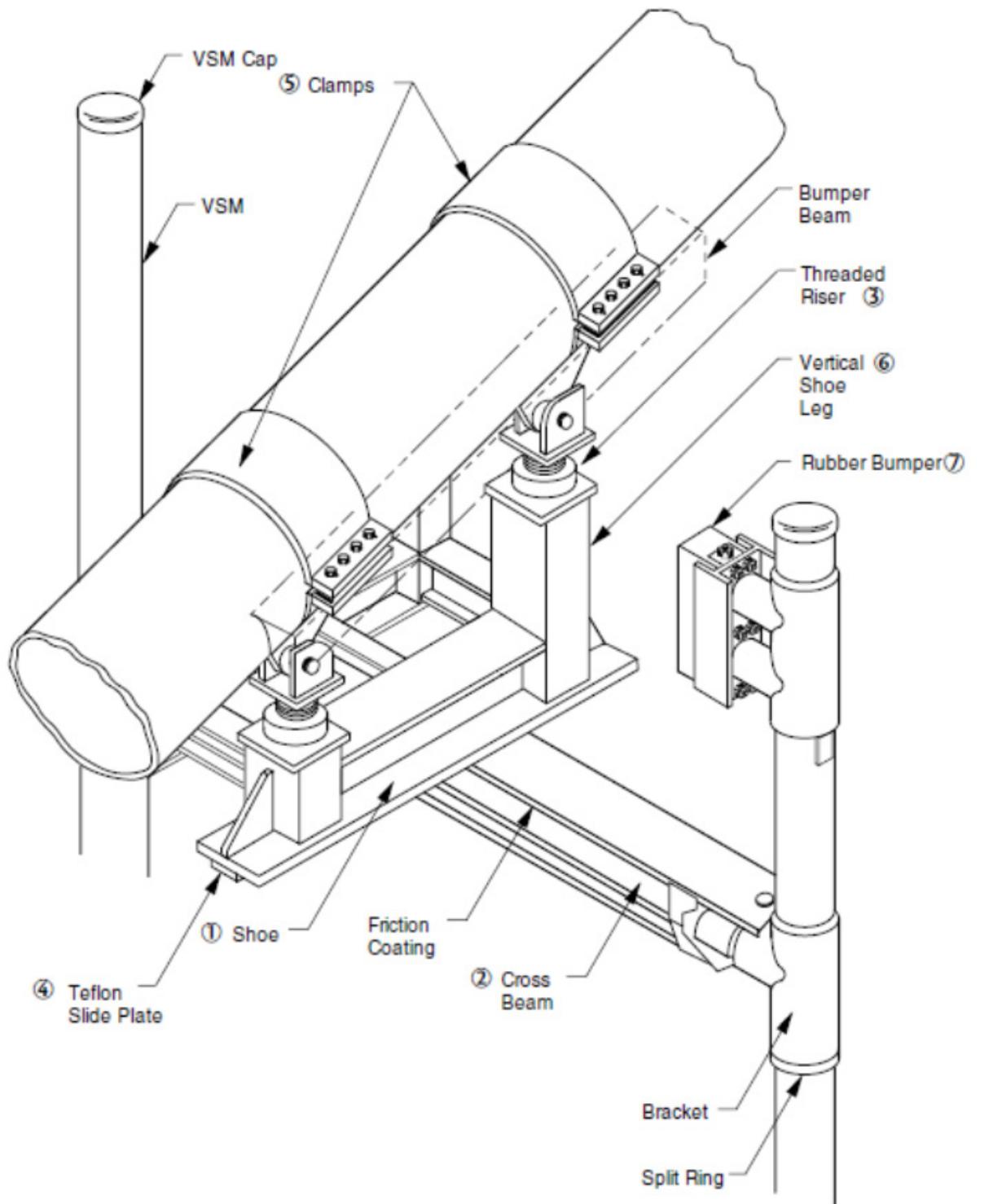
No engineering inspections were conducted on pipeline bridges in 2010. An advanced non-linear dynamic structural analysis of the Tazlina River Pipeline Bridge was recommended in 2009, but was not performed.

Eighteen vehicle bridges had engineering-level inspections performed in 2010. Only one poor rating of an attribute (running planks) was given for one bridge. All bridges not receiving an engineering-level inspection had an annual inspection by the area managers. A comprehensive evaluation of the 10 road crossings was not completed in 2010.

- Split ring survey, load testing and split ring adjustment maintenance information in the aboveground program report included information about split ring elevation surveys and load testing. As part of an ongoing target to survey all split ring elevations on a seven-year cycle, elevation surveys of continuous segments of the aboveground pipeline continued in 2010 with the aboveground segments between

PLMP 624.15 to PLMP 736.16 and PLMP 121.3 to PLMP 125.9. A total of 89.9 miles of aboveground segments were surveyed. According to APSC's report, "all aboveground segments have been surveyed recently based on the new permanent benchmark network established using stable anchor platforms."

**Intermediate Support Assembly Diagram for TAPS (provided by APSC)**



## **Maintenance and Repair in 2010**

As part of the aboveground program report, APSC provided details about maintenance activities. Below is a brief summary of several of those activities described by APSC in the report.

- VSM replacement at Jim River – Bent 30 at Jim River (PLMP 271.45) was replaced in 2009 and was completed in 2010 with finish grading and initiating revegetation of disturbed areas.
- Heat pipe repair – 3,657 of approximately 124,300 heat pipes were converted to carbon dioxide in 2010. Another 47 heat pipes were recharged. Approximately 20,300 heat pipes have been converted to carbon dioxide since 2001.
- Shoe replacement, repair, and re-centering – in May of 2010, APSC discovered significant cracking of the shoe bases downstream of Atigun Pass. The pipeline in this area is operating in a slack line condition at current throughput rates. No reduction in integrity of the pipeline is predicted due to this condition. No other shoes were identified for replacement in 2010.
- Anchor re-centering, re-leveling, and repair – According to the aboveground program report, APSC prioritized the resetting of three offset anchors in 2010.
- Teflon slide plate replacement – APSC maintenance strategy was changed from replacing side plates systematically bent-by-bent to replacing them where damage exceeds the MR-48 criteria. There are 71 reports of damaged slide plates in the maintenance backlog.
- VSM repair – according to the aboveground program report, the 2010 annual line-walk identified one split VSM. APSC reported that the longitudinal fabrication seam failed. This work has been deferred due to prioritization of other repair work.
- VSM caps and weep holes – a pilot program was started in 2010 to determine the functionality of weep holes in the VSMs. Analysis is continuing to determine if the blocked weep holes are a problem and when they are needed.
- Pipeline bridge maintenance – APSC stated in the aboveground program report that “no significant maintenance was performed at the 12 pipeline bridges due to competing priorities.”

## **Self-Assessment**

The aboveground support system and bridges program in 2010 had a reduction in staff due to budget cuts. The team went from two and a half positions down to one position. The amount of workload this one position is tasked with has been overwhelming, so in an effort to complete as much as possible, the program engineer choose what was thought to be the most critical parts of the program and completed

them to the best of his ability.

APSC had many shortfalls in 2010 in regards to the aboveground support system and bridge program due to the personnel cuts. The program engineer is attempting to regain the positions lost to complete the work in 2011 and 2012.

### **Recommended for 2011**

The 2010 aboveground program report stated that APSC's aboveground integrity team recommended several actions for 2010.

- Perform bent maintenance at three locations along TAPS
- Install four new VSMS at Squirrel Creek
- Perform repairs on approximately 3,800 heat pipes
- Replace shoes as conditions warrant
- Perform prioritized maintenance to re-center, re-level and repair anchors
- Replace Teflon slide plates as priorities warrant
- Continue weep hole remediation on approximately 17,400 VSMS
- Install module flange and expansion band covers to improve insulation system
- Complete maintenance tasks identified for pipeline and vehicle bridges
- Complete design package for guardrails on two publicly accessible bridges
- Perform routine monitoring of aboveground pipeline support system components such as split ring elevations, heat pipe performance, load distribution, and anchor displacement
- Perform pump station relief line load balancing

### **TAPS Fuel Gas Line Report Summary**

The TAPS FGL provides fuel gas to PS1, PS3 and PS4. The FGL is buried in permafrost for nearly all of its length. During 2010, APSC finished monitoring 79 test locations, assessed the cathodic protection system and performed two corrosion investigations. In addition, APSC remediated more than 100 locations that had been identified as having insufficient depth of cover.

APSC lists planned work on the pipeline as conducting another LiDAR aerial survey, more depth of cover remediation, and one corrosion dig near PLMP 18.

### **TAPS Mainline Integrity Monitoring Report**

APSC's Mainline Integrity Monitoring Program Report (Mainline Integrity Report) describes the mainline integrity program activities in three sections:

1. Belowground Monitoring
2. Cathodic Protection Monitoring
3. Mainline Integrity

## **Belowground Monitoring**

Since TAPS construction, APSC has monitored 380 miles of belowground pipe as part of its belowground stability monitoring program. Belowground stability monitoring requires analysis of the belowground pipe elevation and the thermal state of the surrounding soils in areas where pipe instability has been documented. APSC specialists and contractors survey monitoring rods, measure soil temperature and periodically run a Geopig® to assess the state of the belowground pipe. The objective of these analyses is to identify changes in pipe curvature that may result in conditions detrimental to the belowground pipe integrity.

According to APSC's Mainline Integrity Report, 187 monitoring rods at eight locations were monitored in 2010, with little to no movement detected. Thermistor strings were used to monitor belowground temperature at several sites; the sites monitored showed stable temperature readings as well as movement within acceptable limits. Thermistor string data for mainline refrigeration unit (MLR) 1 and MLR 2 indicated that the soil was frozen beneath the pipe to the depth of the string. APSC concluded that no sites required intervention and annual monitoring should continue.

## **Cathodic Protection Monitoring and Maintenance**

According to the 2010 Mainline Integrity Report, the cathodic protection monitoring and maintenance program's goal is, "to collect and evaluate potential readings from various cathodic protection appurtenances and Close Interval Surveys along TAPS." The stated objective of the program is "to ensure proper cathodic protection system operation and ensure adequate levels of cathodic protection are provided to the belowground sections of TAPS."

Some of the cathodic protection monitoring and maintenance actions that APSC reported in 2010 include, but are not limited to:

- CP monitoring at 813 line-wide coupon test stations and 34 cased road crossings
- Bimonthly inspections and monitoring of all mainline impressed CP rectifiers and mainline bonds
- Current interrupted close interval survey of the below grade mainline between PS1 and PS5 (PLMP 0 to 278.28, or ~120 miles of close internal survey)
- CP monitoring of 49 buried propane tanks between PS1 and PS5
- Potential readings at test stations between PS5 and PS10 (PLMP 278.28 to 585.53)
- Replacement of aging CP generators and upgrading of rectifiers at multiple locations
- Remote monitoring units added to several mainline impressed current rectifiers
- Visual inspection of approximately 1,018 line-wide test stations and incidental repairs
- Removal of two road-crossing casings at PLMP 758.83 and PLMP 765.24 to address potential CP electrical shorts between the carrier pipe and casings

Recommended future cathodic protection maintenance actions described in the report included issuing work orders to repair destroyed test stations and coupons

and the completion of several projects intended to maintain or upgrade the cathodic protection system along TAPS.

### **Mainline Integrity Investigations**

APSC reports that the 2010 integrity program resulted in 16 belowground investigations, 13 of which were related to girth welds or longitudinal welds, or both. The investigations resulted in two welded sleeves at PLMP 450.69 and PLMP 648.88. Future recommendations will be based primarily on the 2009 ILI Rosen survey.

### **Pipeline and Valdez Marine Terminal Corrosion Monitoring Program Summary**

APSC reported that, “the work that was conducted in 2010 concludes that the overall health of the system is in satisfactory condition.” 2010 activities were divided into four categories.

1. Corrosion Inhibitor and Internal Corrosion Monitoring
2. Facility Pipe Integrity Testing (PIT Program)
3. Cathodic Protection (CP) Monitoring and Maintenance
4. Berth Underwater Inspections

### **Corrosion Inhibitor and Internal Corrosion Monitoring Program**

The Corrosion Inhibitor and Internal Corrosion Monitoring Program is designed to ensure the integrity of the piping systems. Coupons from the Corrosion Monitoring Program are categorized in accordance with the National Association of Corrosion Engineers (NACE) standards. The NACE defines four categories: low, moderate, high and severe. All coupons have the average corrosion rate calculated, the maximum pit depth graded, and a mil (thousands of an inch) per year corrosion rate calculated. Locations exhibiting recent corrosion activity were included on the corrosion coupon watch list.

Corrosion inhibitors are injected at pump stations, the VMT and “dead legs” (sections of piping with little or no flow). In 2010, the pump stations had 1,430 corrosion inhibitor injections and the VMT had 387 corrosion inhibitor injections.

In May and October of 2010, 70 corrosion coupons were pulled from TAPS pump station locations; in May and November of 2010, 128 coupon locations were pulled from locations at the VMT.

### **Facility Corrosion Integrity Monitoring Program**

The Facility Corrosion Integrity Monitoring Program, or Pipeline Integrity Testing (PIT) Program, is intended to test and monitor the piping systems in order to ensure system integrity and identify corrosion. Non-destructive testing (NDT) is performed on crude and gas mainline valve bypass piping and facility piping located at the pump stations, North Pole Metering, the Glennallen Response Base (GRB), Petro Star Metering and the VMT. The piping systems are divided into line segments which are referred to as legs. The legs are examined to determine the “most probable areas of

corrosion.” That information is used to select areas to be examined using ultrasonic testing or radiographic testing, or both.

When appropriate, APSC modeled the PIT program inspections after the American Petroleum Institute 570, Piping Inspection Code. The Corrosion Monitoring Report stated that, “corrosion is evaluated based upon the piping service and the remaining wall thickness in its capacity to maintain the normal operating pressure of the system. Corrosion related wall loss of 20% or greater is deemed to be ‘actionable’.” Actions that may be initiated consist of additional inspection, increased inspection frequencies, coupon monitoring, corrosion inhibitor injection and material replacement.

A total of 291 sites were inspected as part of the PIT program in 2010. The Corrosion Monitoring Report stated that, “the use of ultrasonic phased array scanning along with a Time of Flight Diffraction (TOFD) technique for measuring and monitoring internal pipe and weld material profile was utilized.” APSC anticipates that accessibility to locations that were previously difficult to examine will be improved with the new technique.

### **Crude Oil Mainline Valve Bypass Piping**

In 2010, 18 crude mainline valves were tested. Visual atmospheric corrosion control inspections were conducted on 34 mainline valves. Twelve of the total valves inspected during 2010 had corrosion in the actionable range on the bypass piping; the range of wall loss ranged from 22% to 58%. According to APSC, R-Streng (a technology used to determine the remaining strength of corroded pipe) calculated that the piping was operating within the Safe Operating Operations Pressure (SMOP) and will be calculated again in 2018.

## **Belowground Investigations**

### **PS3 Crude Oil Piping**

In 2010, 19 sites were excavated at PS3. Three sites had section loss in the actionable range (above 20%). These sections were located at the S2 and M2 valves drain piping and one girth weld.

### **PS4 Crude Oil Piping**

Of the 36 sites inspected, none of the piping had corrosion in the actionable range.

### **PS4 Fuel Oil Piping**

Fuel oil piping inspections were performed to obtain a baseline for the new piping installed. No corrosion was detected.

### **PS4 Fuel Gas Piping**

These inspections were also to obtain a baseline for the new piping installed. No corrosion was detected.

### **PS5 Crude Oil Piping**

In 2010, A belowground investigation was conducted on the 16-inch injection booster pump header pipes at PS5. The location of the excavation was at the southeast corner of the injection pump building. The wall loss on the injection pump piping ranged from 16% to 42%, with three of the five grid locations having wall loss in the actionable range. These sites will be inspected again in 2013.

### **PS6 Crude Oil Piping**

Four sites were inspected and were found to have only minor surface corrosion.

### **PS7 Crude Oil Piping**

Thirty-six sites at PS7 were inspected for corrosion. Seven were reported in the actionable range (21% to 39%). Inspection cycles have been established to monitor the corrosion.

### **PS8 Crude Oil Piping**

New piping was installed during the PS8 bypass project in 2010. The piping is stainless steel and no corrosion was detected during the baseline inspections.

### **PS9 Crude Oil Piping**

Twelve inspection sites were excavated during 2010; two of the sites had corrosion in the actionable range (22% and 29%). These were located at girth welds on the 36-inch crude header at Tank 190.

### **North Pole Metering Crude Oil Piping**

APSC inspected 18 sites at the North Pole metering facility. One site was identified with internal corrosion of 40% and noted as channeling corrosion. A second site was identified as mechanical damage with a wall loss of 55%. No corrosion was present at this location.

### **Petro Star Crude Oil Piping**

New piping was installed in 2008 at the Petro Star Refinery. Five locations were excavated with no corrosion noted.

### **Valdez Marine Terminal**

Belowground investigations at the VMT were conducted at the header piping transitions into the dike containment wall. This location was chosen to determine the corrosion rates at the soil-to-air interface. Corrosion wall loss was calculated between 0% to 16%, with no grids falling into the actionable range.

APSC also completed inspections on piping related to oil movements and support, ballast water treatment and low and high pressure power vapor systems. Corrosion was identified at these locations between 6% and 88%, with several sites within the actionable range. Sites within the actionable range are treated the same as at the pump stations, with a inspection interval and repair schedule when warranted.

### **TAPS Facilities Cathodic Protection Program**

The TAPS Facilities Cathodic Protection Program was created to ensure that the facility piping, bottoms of tanks and miscellaneous metal structures at pump stations and the VMT have adequate cathodic protection. In 2010, a contractor completed a cathodic protection survey of the pump stations, the VMT and the Ship Escort Response Vessel Services (SERVS) facility.

### **VMT Facility Underwater Inspection Program**

The VMT Facility Underwater Inspection Program provides annual underwater inspections that evaluate the structural integrity and operability of the loading berths, the small boat harbor and tug docking structures, the firewater system intake devices and the cathodic protection systems at the VMT. In 2010, primary and secondary berthing dolphin structures at Berth 4 and Berth 5 were inspected. The firewater intake assemblies for Berth 4 and Berth 5 were cleaned, inspected and maintained. Along with the inspections at Berth 4 and Berth 5, a cathodic protection survey and subsequent repairs were completed.

### **TAPS Rivers, Floodplains, and Glacier Monitoring Report Summary**

The rivers and floodplains report indicated that annual monitoring in 2010 produced no findings that threatened TAPS integrity. The APSC rivers and floodplains program is based primarily on right-of-way lease stipulations 1.18, 3.6 and 3.8.

Rivers and floodplains monitoring includes an APSC P&CM's biweekly aerial surveillance to observe changes in river and floodplain environments that may affect TAPS. Unusual conditions noted along rivers and floodplains during the aerial surveillances prompt ground inspections and are reported according to the APSC Surveillance and Monitoring Manual, MS-31.

Rivers and floodplains monitoring also includes annual surveillances performed by the APSC engineering department. Annual monitoring incorporates both aerial and ground surveillances performed by engineers in order to observe river, floodplain and glacier environments, as well as glaciers that may affect TAPS.

According to the 2010 rivers and floodplains report, the engineering monitoring surveillance noted that the spring breakup and aufeis floods along TAPS were moderate to mild along the entire length of the pipeline. Summer floods were normal along the Sagavanirktok River area. There was no significant bank erosion with the exception of PLMP 32, 72 and 165.5.

The banks at PLMP 32 and 72 are continuing to erode upstream of the existing revetments. In 2011, both locations will be repaired with riprap to prevent additional erosion.

At PLMP 165.5, the Atigun River has been steadily eroding the access road to check valve 30. A guide bank will be installed in 2011 to protect the access road.

In the Dietrich and Koyukuk Rivers Drainage Basin, APSC found no significant flood damage caused by summer or fall rains. Repairs to restore the work pad bridge abutments at the Chandalar River, MP 171.5; Erickson Creek, MP 382.5 and Treasure Creek, MP 442, are scheduled for 2011. The embankment around the abutments has progressively been eroding over the last several years and is in need of repairs before additional damage occurs.

An early fall rain event in the Delta River Drainage Basin exposed about 60 feet of the mainline pipe at Darling Creek. The pipe was exposed due to scour from the creek's high velocity during the event. The coating on the pipe was damaged, but there was no mechanical damage to the pipe. Emergency repairs were completed in November of 2010 and permanent repairs will be completed in the summer of 2011. The existing guide bank will be extended to protect the area where the pipe was exposed as well as check valve 89.

No significant damage to TAPS occurred in the Copper River drainage basin in 2010. A meander cutoff has developed along the Gulkana River near PLMP 654. APSC will monitor the cutoff for possible channel changes that may affect the pipeline. Occasional high water events in the Lowe River drainage basin and the VMT due to summer precipitation resulted in minor erosion of TAPS infrastructure. The embankment of Unnamed Creek work pad bridge at PLMP 787.8 experienced some erosion, but caused no immediate threat to the bridge.

APSC monitored the Black Rapids, Castner, Fels, Canwell and Worthington glaciers in 2010. No reportable conditions posing a threat to TAPS were found. Aerial imagery is taken of the glaciers on a five-year cycle to ensure that they are no threat to the mainline pipe.

### **TAPS Right-of-Way and Facilities Civil Monitoring Report Summary**

The 2010 Right-of-Way and Facilities Civil Monitoring Program Report addresses monitoring, maintenance and repairs performed on the TAPS right-of-way in 2010. The information used to direct this program is accumulated from various sources, including right-of-way maintenance surveillances, engineering inspections and reconnaissance, surveys and project activities following requirements described in the Integrity Management Engineering Monitoring Program. Civil monitoring is conducted to evaluate and trend the condition of TAPS civil assets per right-of-way lease stipulations.

APSC stated in the 2010 Right-of-Way and Facilities Civil Monitoring Program Report that there were no notable seismic events or significant ground movement along the TAPS corridor. Photo documentation was taken of monuments along the right-of-way, showing that none of them were disturbed in 2010. The same process will be performed again in 2012 as part of the bi-annual schedule. In the event a significant earthquake occurs in 2011 or ground movement is observed, the process will be initiated immediately after the event.

All planned slope monitoring was completed in 2010 and APSC predicts that there will be no slope stability issues affecting the pipeline integrity in the near future.

Valdez slope monitoring conducted in 2010 included piezometer readings taken to monitor groundwater levels in the rock slopes at the power/vapor facility, the BWT Plant, West Manifold and East and West Tank Farms. The readings indicated no significant increases in levels from 2009 to 2010. Evaluation of the 2010 groundwater levels were based on historical trends and the redundancy provided by multiple piezometers in each area. The 2010 groundwater levels exceeded the pre-defined "flag" levels but the evaluation indicated no static slope instability or immediate threats to secondary containment.

The data collected at the VMT concluded that there was no immediate threat to static slope stability, secondary containment or tank foundations from groundwater levels. The slopes around the VMT require rock scaling, rock bolt tightening and placement, removal of vegetation above the slope and shotcrete placement.

Annual engineering evaluations were completed for the seven active slopes at Lost Creek (PLMP 392), Treasure Creek Slope (PLMP 442), the GRB Hill (PLMP 686), Tazlina River Hill (PLMP 687), Klutina River Hill (PLMP 698.1), Squirrel Creek North Slope (PLMP 717.0) and Squirrel Creek South Slope (PLMP 717.4). The evaluations indicated no major changes.

Slope displacement rates at Treasure Creek are at historic maximums based on the new inclinometer well installed in 2008, but still fall within the acceptable limits set by APSC engineers.

Creep and thaw consolidation of weaker soils below the zone of influence of the heat pipes was the primary source of progressive ground deformation at Lost Creek. To help understand the seasonal effects at Lost Creek and the GRB, periodic monitoring will continue to be performed.

Conditions at Slate Creek (PLMP 408) were assessed to determine if mass soil movement is the cause of progressive vertical support member tilt. More data is needed to determine what is happening in this area.

Partial surveys were conducted at PS1, PS3, PS4, PS5, PS6, PS8 and the VMT, to monitor the movement of facilities. All monitoring and maintenance recommended by Integrity Management in 2009 Right-of-Way and Facilities Civil Monitoring Program Report was performed in 2010. The measurements were within acceptable movements at all locations. PS3, PS5 and PS6 require more surveying due to higher than normal movements, but are still within the limits set by APSC. PS3 has two shallow pipe supports at Facility 3006 that require continual monitoring due to historical movement. At the PS5 manifold building, Facility 5006, three survey points have had movement greater than 0.1 feet from 1977 to 2010. These points will

be monitored again in 2011.

The Fuel Pump House, Facility 6042, at PS6 is having settlement/heave issues. Utilities going into and coming out of the building have been modified with flexible pipe/conduit to accommodate the movements. Monitoring will continue in 2011.

Plans for 2011 will include a full survey (monitoring all points at a facility) at PS1 due to the new pump modules and corresponding facilities being installed. This will establish a baseline for future monitoring. PS6 will also receive a full survey due to the fuel pump house facility and the movement occurring there. All other pump stations and the VMT will have partial surveys completed, which will obtain measurements from a select portion of the facilities.

### **TAPS Aboveground Storage Tank Monitoring Report Summary**

APSC performs two general categories of inspections for oil or hydrocarbon storage tanks:

1. External inspections at monthly intervals for tanks with volumes more than 10,000 gallons and annually for tanks with volumes less than 10,000 gallons. ADEC monitors tanks larger than 10,000 gallons.
2. Internal inspections at ADEC-approved intervals for tanks with volumes more than 10,000 gallons. Typically this is performed at 10-year intervals, but APSC or regulatory agencies may modify this schedule.

Major tank work during the reporting period included:

- Tank 170, a crude breakout tank at PS7. Inspected and placed in cold storage
- Tank 147, a fuel-oil storage tank at PS3. Removed from service
- Tank 190, a crude-oil breakout tank at PS9. Inspected because of an overfill incident
- Tank 12, a crude-oil storage tank at the VMT. Inspected and returned to service
- Tank 55, a fuel-oil tank at the VMT. Removed from service

The most important tank project work APSC conducted in FY11 involved Tank 190. Tank 190 was involved in an overflow incident in May of 2010. In July of 2010, APSC produced a consultant's recommendation based on an external inspection. The inspection noted distortion of the roof plates and some peeled coating after the overflow incident. The anomalies were attributed to temporary overpressure; however, USDOT/PHMSA responded by issuing a corrective order.

An internal inspection conducted in July of 2011 revealed widespread floor deterioration. As a result, APSC determined that the tank floor had to be replaced and upgrades made to the cathodic protection system beneath the tank. Tank 190 will remain out of service until the repairs are complete. TAPS can be operated without this tank, but operational flexibility is reduced.

In June of 2010, APSC released a root-cause investigation of the Tank 190 overfill incident. The investigation concluded that two root causes created the incident: (1) design issues and (2) failure to learn as an organization. It also cited three contributing causes: (1) lack of situational awareness, (2) deficiencies in procedure review, and (3) lack of clarity in administrative controls, in particular confusion over who had control and responsibility of the area during and prior to the incident.

### **TAPS Valve Report Summary**

APSC's mainline valve maintenance program comprises the valves that affect flow in the 48-inch line, primarily gate and check valves and bypasses. The primary modes of proving the function and condition of the valves are:

1. The motorized remote gate valves are moved part-way on command. The test proves most of the communications, signaling, control and part of the mechanical action of the valve and does not require throughput loss. This type of testing primarily comes from USDOT/PHMSA regulations.
2. A percentage of valves are tested for leak-through and sealing capabilities.

The movement test is performed on both block and check valves on a bi-annual basis. Tests during the past year showed little abnormal maintenance; however, the trend on minor clapper valve shaft continued upward. Over the past decade, the percentage has approximately doubled, from 2.5 to 5.0%.

APSC tested six mainline valves for leakage; all leak volumes fell within allowable amounts listed in their specifications (P-504, In-Service Performance Criteria: Primary Crude Block Valve).

The regulatory requirements for valves on TAPS are covered by a matrix of regulatory requirements. Examples are various ADEC statutes and administrative codes, Stipulation 3.2.2.1 of the TAPS right-of-way lease and grant, Pipeline System Standards – Valves, a 1997 Memorandum of Agreement with the JPO on Valve Testing and Maintenance, USC 49 CFR §192.745 and §195.420 on Valve Maintenance, and a 2006 Consent Agreement between USDOT/PMHSA and APSC.

The major valve projects performed during the past fiscal year were:

- Replacement of two ball valves used for pigging at PS4, because of excessive leak-through
- Phased replacement of Ormat generators
- Repair and maintenance of vents and drains. This work covered pipe repair and small-bore valves, and should improve capabilities of draining sections of TAPS, if needed
- Replacement of a ball valve because of leak-through and stem leaks
- Installation of bypasses at PS9. This is part of a phased program to install bypasses

around large-bore valves at pump stations to decrease wear on the valves.

PS3 is the next station scheduled for this upgrade

- Consolidation of two commands from the SIPPS control system. APSC replaced “ISOLATE PUMPHOUSE” and “BLOCK LINE” with “ISOLATE STATION.” This is considered to be a major configuration change. APSC made the change because (with the temporary exception of PS7) there are no longer any redundant pump stations on TAPS
- Continued work on identification of spare parts and bills of materials for strategic reconfiguration valves

BLM issued an order to APSC covering valves at PS3, PS4, PS9 and “any other applicable locations.” The order required APSC to install pressure safety valves on nitrogen supplies to valve actuators, incorporate all in-service pressure relief and safety valves into the APSC safety valve program, tag the valves for verification of inspection and testing and verify and complete documentation and records for all in service safety relief valves.

#### **Report Correction, Retraction and Amendment Guidelines**

To propose a correction to any information in this report, please follow these steps:

1. Submit a written request for a correction to the following address:

Graham Smith  
State Pipeline Coordinator’s Office  
411 W. 4th Avenue  
Anchorage, AK 99501

2. In the request, please include the following:

- Contact address, telephone number and email address
- The page number and, if applicable, the table number of the proposed change
- Suggested and specific wording that would correct the alleged error
- Supporting evidence and references

3. Upon receipt of the written request, the SPCO will send a written response acknowledging receipt of the suggestion.

4. The SPCO will evaluate every suggestion and provide a written response to the requestor describing the reasons that the request will be accepted or rejected. Alternatively, the SPCO may ask for additional information if the original request is deemed to have insufficient evidence for evaluation.

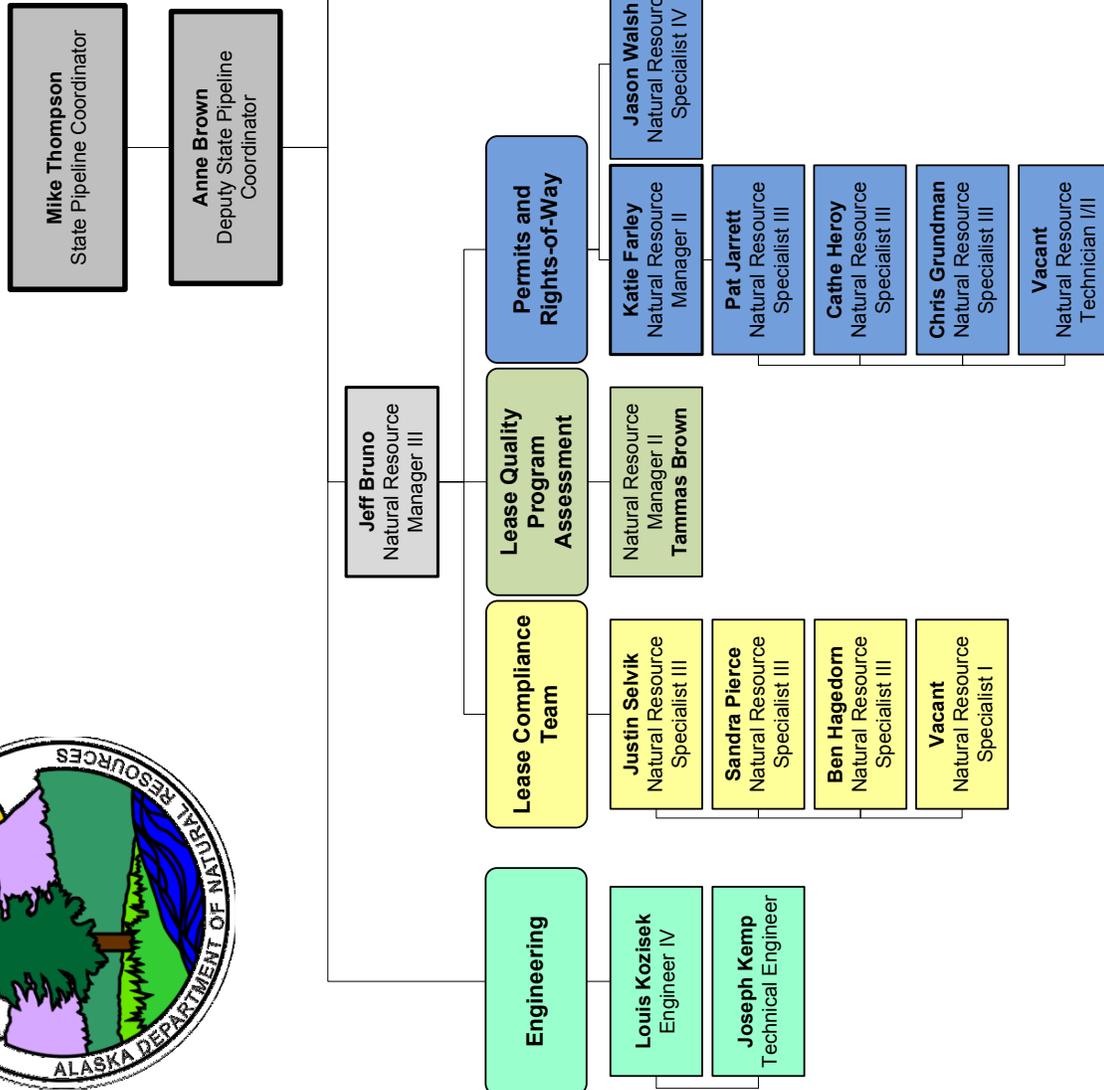
5. The SPCO will respond in writing with a determination directly to the requestor. If the SPCO determines that an error was made in this report, the SPCO will include the changes and retractions in the online version of the current annual report and in the next print edition.

## Appendix A: Acronyms and Abbreviations

ACF	Alpine Central Facility	FLIR	Forward Looking Infrared
ADEC	Alaska Department of Environmental Conservation	FY	Fiscal Year
ADF&G	Alaska Department of Fish and Game	GIS	Geographic Information System
AGDC	Alaska Gasline Development Corporation	GRB	Glennallen Response Base
AHFC	Alaska Housing Finance Corporation	H <sub>2</sub> S	Hydrogen Sulfide
ANGDA	Alaska Natural Gas Development Authority	HDD	Horizontal Directional Drilling
APDES	Alaska Pollutant Discharge Elimination System	HSE	Health, Safety, and Environment
APSC	Alyeska Pipeline Service Company	IFC	Issued for Construction
AS	Alaska Statute	ILI	In-Line Inspection
BEST	Behavior Enhanced Safety Techniques	IMP	Integrity Management Program
BLM	Bureau of Land Management	IMT	Incident Management Team
bopd	barrels of oil per day	JPO	Joint Pipeline Office
BPTA	BP Transportation (Alaska) Inc.	KKPL	Kenai Kachemak Pipeline
BPXA	BP Exploration (Alaska) Inc.	KPE	Kuparuk Pipeline Extension
BWT	Ballast Water Treatment	KPL	Kuparuk Pipeline
CFP	Central Facilities Pad	KRU	Kuparuk River Unit
CFR	Code of Federal Regulations	LAS	Land Administration System
CIC	Corrosion, Inspection, and Chemical	LEFM	Leading Edge Flow Meter
CP	Cathodic Protection	LiDAR	Light Detection and Ranging
CPAI	ConocoPhillips Alaska, Inc.	MFL	Magnetic Flux Leakage
CPF	Central Processing Facility	MOC	Management of Change
C-Plan	Oil Discharge Prevention and Contingency Plan	MP-166	APSC Monitoring Program
DEIS	Draft Environmental Impact Statement	MPI	Main Production Island
DNR	Alaska Department of Natural Resources	NEC	National Electric Code
DOLWD	Alaska Department of Labor and Workforce Development	NNGP	Nuiqsut Natural Gas Pipeline
DOT&PF	Alaska Department of Transportation and Public Facilities	NOV	Notice of Violation
EIS	Environmental Impact Statement	NPDES	Nation Pollutant Discharge Elimination System
EPA	U.S. Environmental Protection Agency	NRM	Natural Resource Manager
FGL	Fuel Gas Line (TAPS)	NSB	North Slope Borough
		OCC	Operations Control Center
		OM&OQ	Operations, Maintenance and Operator Qualifications Manual
		OPL	Oliktok Pipeline
		OQ	Operator Qualification
		OSHA	Occupational Safety and Health Administration
		P&CM	Pipeline and Civil Maintenance Coordinator
		PHA	Process Hazard Analysis
		PHMSA	Pipeline and Hazardous Materials Safety Administration
		PLMP	Pipeline Milepost

PLQ	Permanent Living Quarters
PPE	Personal Protective Equipment
PS	Pump Station
PSIO	Petroleum Systems Integrity Office
PTEP	Point Thomson Export Pipeline
QAP	Quality Assurance Program
ROW	Right-of-Way
RTU	Remote Terminal Unit
SDI	Satellite Drilling Island
SERVS	Ship Escort Response Vessel System
SFMO	State Fire Marshal's Office
SPCO	State Pipeline Coordinator's Office
SR	Strategic Reconfiguration
SWD	Solid Waste Disposal
TAPS	Trans-Alaska Pipeline System
TG	Turbine Generator
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USDOT	U.S. Department of Transportation
VMT	Valdez Marine Terminal
VSM	Vertical Support Member
WWS	Walking Speed Survey

# State Pipeline Coordinator's Office Staff Resources



State Agency Liaisons				
Lee McKinley ADF&G Habitat Liaison	John Cawthon ADPS Fire Marshal Liaison	Diana Parks ADPS Fire Marshal's Office	Dan O'Barr DOL&WD Electrical Liaison	Ray Elleven DOL&WD Safety Liaison
			Graham Wood ADEC Oil Spill Response Liaison	Bill Haese ADEC Oil Spill Response Liaison
				Ron Doyel ADEC Liaison

## Appendix C: FY11 Annual Report Major Source Documents

### Major Source Documents

1. **Alyeska Pipeline Service Company.** *Trans Alaska Pipeline System (TAPS) 2010 Integrity Management Annual Reports: Mainline Aboveground Support System and Bridges Program.* Anchorage: Alyeska Pipeline Service Company, 2011.
2. —. *Trans Alaska Pipeline System (TAPS) 2010 Integrity Management Annual Reports: Fuel Gas Line Monitoring Program.* Anchorage: Alyeska Pipeline Service Company, 2011.
3. —. *Trans Alaska Pipeline System (TAPS) 2010 Integrity Management Annual Reports: Mainline Integrity Monitoring.* Anchorage: Alyeska Pipeline Service Company, 2011.
4. —. *Trans Alaska Pipeline System (TAPS) 2010 Integrity Management Annual Reports: Pipeline and Valdez Marine Terminal Facilities Corrosion Monitoring.* Anchorage: Alyeska Pipeline Service Company, 2011.
5. —. *Trans Alaska Pipeline System (TAPS) 2010 Integrity Management Annual Reports: Aboveground Storage and Tank Monitoring Program.* Anchorage: Alyeska Pipeline Service Company, 2011.
6. —. *Trans Alaska Pipeline System (TAPS) 2010 Integrity Management Annual Reports: Rivers, Floodplains, and Glacier Monitoring Program.* Anchorage: Alyeska Pipeline Service Company, 2011.
7. —. *Trans Alaska Pipeline System (TAPS) 2010 Integrity Management Annual Reports: Right-of-Way and Civil Monitoring Program.* Anchorage: Alyeska Pipeline Service Company, 2011.
8. **BP Transportation (Alaska) Inc.** *Badami Pipelines Rights-of-Way: 2010 Annual ADNR Surveillance and Monitoring Report.* Anchorage: BP Transportation (Alaska) Inc., 2011.
9. **BP Transportation (Alaska) Inc.** *Milne Point Pipelines Rights-of-Way: 2010 Annual ADNR Surveillance and Monitoring Report.* Anchorage: BP Transportation (Alaska) Inc., 2011.
10. **Kuparuk Transportation Company.** *2010 Annual Comprehensive Report on Pipeline Activities for the Kuparuk Pipelines: ADL 402294, and ADL 409027.* Anchorage: Kuparuk Transportation Company, 2011.
11. **BP Transportation (Alaska) Inc.** *Endicott Pipeline Right-of-Way: 2010 Annual ADNR Surveillance and Monitoring Report.* Anchorage: BP Transportation (Alaska) Inc., 2011.
12. —. *Northstar Pipelines Rights-of-Way: 2010 Annual ADNR Surveillance and Monitoring Report.* Anchorage: BP Transportation (Alaska) Inc., 2011.
13. **ConocoPhillips.** *2010 Annual Comprehensive Report on Pipeline Activities for the Alpine Pipelines: ADL 414701, ADL 415932, and ADL 415857.* Anchorage: ConocoPhillips, 2011.
14. **Marathon Pipe Line Company, LLC.** *Kenai Kachmak Pipeline 2010 Annual Report.* Kenai: Marathon Pipe Line Company, LLC, 2011.

15. **North Slope Borough.** *Nuiqsut Natural Gas Pipeline: Annual Comprehensive Report on Pipeline Activities and the State of the Pipeline System.* Anchorage: North Slope Borough, 2011.
16. **Oliktok Pipeline Company.** *2010 Annual Comprehensive Report on Pipeline Activities: Oliktok Pipeline ADL 411731.* Anchorage: Oliktok Pipeline Company, 2011.
17. **Tesoro Alaska Pipeline Company.** *2010 Annual Comprehensive Report is on Pipeline Activities and State of the Pipeline System for Tesoro Alaska Pipeline Company (Nikiski) Right-of-Way Lease - ADL 69354.* San Antonio: Tesoro Refining & Marketing Company, 2011.

**Appendix D: Acreage, Survey and Lease Information**

ADL #	Lease Name	Lease Effective Date	Lease Expiration Date	Lessee	Acres on State Land	Survey #
415932	Alpine Diesel Pipeline	12/15/1998	12/14/2018	ConocoPhillips Company	148.51	EPF 2002-40 <sup>1</sup>
415701	Alpine Oil Pipeline	12/15/1998	12/14/2018	ConocoPhillips Company	148.66	EPF 2002-40
415857 <sup>2</sup>	Alpine Utility Pipeline	1/6/1999	1/5/2019	ConocoPhillips Company	148.65	EPF 2002-40
415472	Badami Sales Oil Pipeline	12/15/1997	12/14/2022	BP Transportation (Alaska) Inc.	1,240 <sup>3</sup>	EPF 2002-18 & 2008-09
415965	Badami Utility Pipeline	12/15/1997	12/14/2022	BP Transportation (Alaska, Inc.	352.1 <sup>37</sup>	EPF 2002-18
410562	Endicott Pipeline	8/5/1986	5/2/2034	Endicott Pipeline Company	1,073.816	ASLS 84-96 & EPF 2008-40
228162	Kenai Kachemak Pipeline	11/26/2002	11/25/2032	Kenai Kachemak Pipeline, LLC	104.556	KKPL - EPF 2004-45 HVE - EPF 2005-41 KE - EPF 2007-04
402294	Kuparuk Pipeline	8/26/1980	5/2/2034	Kuparuk Transportation Company	485.675	ASLS 87-15 (Amended)
409027	Kuparuk Pipeline Extension	4/18/1983	5/2/2034	Kuparuk Transportation Company	159.09	ASLS 87-15 (Amended)
410221	Milne Point (Oil) Pipeline	1/15/1985	5/2/2034	Milne Point Pipeline, LLC	186.92	ASLS 84-114
416172	Milne Point Products Pipeline	12/5/2000	12/4/2030	Milne Point Pipeline, LLC	258.6 <sup>37</sup>	2007-57; not approved
69354	Nikiski Alaska Pipeline	1/30/1976	1/29/2031	Tesoro Alaska Pipeline Company	64.021	ASLS 76-215
230928	North Fork Pipeline	9/28/2010	09/27/2040	Anchor Point Energy, LLC	23.06 <sup>37</sup>	Survey not completed
415975	Northstar Gas Pipeline	10/1/1999	9/30/2019	Northstar Pipeline Company, LLC	405.51	EPF 2002-17
415700	Northstar Oil Pipeline	10/1/1999	9/30/2019	Northstar Pipeline Company, LLC	419.13	EPF 2002-17
416202	Nuiqsut Natural Gas Pipeline	3/15/1999	3/14/2019	North Slope Borough	17.67	As-built survey approved by DNR 12/17/2003
411731	Oliktok Pipeline	6/1/1986	5/2/2034	Oliktok Pipeline Company	485.58	ASLS 87-15 (Amended)
63574	Trans-Alaska Pipeline System	5/3/1974	5/2/2034	TAPS Owners <sup>4</sup>	6,021.87 <sup>5</sup>	Multiple surveys <sup>6</sup>

<sup>1</sup> A typographical error exists on the survey plat with respect to the acreage of Parcel 4, but the square feet of Parcel 4 is correct; total acreage is 148.51 acres

<sup>2</sup> ADL 415857 is a ROW Grant, not a lease

<sup>3</sup> Acreage based on construction ROW acreage from lease, not surveyed acreage

<sup>4</sup> BP Pipelines Alaska Inc. (46.93%), ConocoPhillips Alaska Transportation Inc. (28.29%), Exxon/Mobil Pipeline Co. (20.34%), Unocal Pipeline Company (1.36%), Koch Alaska Pipeline Co. LLC (3.08%)

<sup>5</sup> Per Appraisal 3165, DNR Summary of Appraisal dated 7/21/2006, and Memorandum of May 17, 2007 from the Review Appraiser to the SPCO to add fuel gas line acreage

<sup>6</sup> Includes the TAPS centerline survey, surveys of pump stations on State land, and as-built surveys for ROW amendments

**Appendix E: Pipeline Right-of-Way Lease Appraisal Information**

Pipeline	ADL #	ROW Status	State Acres	Annual Rental	Next Appraisal Due (Prior to)
Alpine Diesel	415932	Operations	148.51	\$77,629*	12/15/2013
Alpine Oil	415701	Operations	148.66	\$77,713*	12/15/2013
Alpine Utility	415857	Operations	148.65	\$77,703*	1/6/2014
Badami Sales Oil	415472	Construction	1,240.00	\$540,144	12/15/2012
Badami Utility	415965	Construction	352.10	\$181,122	12/15/2012
Endicott	410562	Operations	1,073.82	\$736,655	8/5/2013
Kenai Kachemak	228162	Operations	104.56	\$29,709	11/26/2012
Kuparuk (Oil)	402294	Operations	485.68	\$370,347*	8/26/2013
Kuparuk Extension	409027	Operations	159.09	\$138,599*	4/18/2013
Milne Point (Oil)	410221	Operations	186.92	\$162,845	1/15/2013
Milne Point Products	416172	Construction	258.60	\$225,292	12/5/2010**
Nikiski Alaska	69354	Operations	64.02	\$53,648	1/30/2014
North Fork	230928	Construction	23.06	\$4,031****	8/29/2011
Northstar Oil	415700	Operations	419.13	\$317,456	10/1/2014
Northstar Gas	415975	Operations	405.51	\$252,429	10/1/2014
Nuiqsut Natural Gas	416202	Operations	17.67	\$11,120	3/15/2014
Oliktok	411731	Operations	485.58	\$370,347*	1/1/2013
TAPS	63574	Operations	6,021.87	\$220,956*	***

\* Current Appraisal under appeal  
 \*\* Current Appraisal was due 12/5/2010, but not timely received by DNR  
 \*\*\* Last Appraisal (No. 3165) was completed in 2002 and is under appeal. SPCO and DNR Appraisal Section agreed a retrospective appraisal is acceptable upon appeal resolution  
 \*\*\*\*Estimated rental based on acreage of construction right-of-way—Appraisal due date extended to 8/29/2011.

**Appendix F: Physical Characteristics of SPCO Jurisdictional Pipelines**

Pipeline System	Diameter (inches)	Normal Wall Thickness (inches)	Product	Year Constructed	System Length (miles)
Alpine Diesel Pipeline	2.375	0.156	Diesel Fuel	1998-1999	34.2 (23.7 on state land)
Alpine Oil Pipeline	14	0.312 to 0.438	Crude Oil	1998-1999	34.2 (23.7 on state land)
Alpine Utility Pipeline	12.75	0.330	Seawater	1998-1999	34.2 (23.7 on state land)
Badami Sales Oil Pipeline	12	0.281 aboveground 0.500 belowground	Crude Oil	1998	25 (all on state land)
Badami Utility Pipeline	6	0.375 aboveground 0.432 river crossing	Natural Gas and Product	1998	31 (all on state land)
Endicott Pipeline	16	0.312	Oil	1987	26 (all on state land)
KKPL Mainline and HVE	12.75	0.330 and 0.500	Natural Gas	2003-2004	50 including the HVE (42 on state land)
KKPL, Kasilof Extension	6.63	0.280 and 0.432	Natural Gas	2006	4.2 (all on state land)
Kuparuk Pipeline	24	0.406 (0.750 in Kuparuk Floodplain)	Oil	1984	28 (all on state land)
Kuparuk Pipeline Extension	18	0.375 (original construction); 0.438 (2009 replaced sec.)	Oil	1981 original; 2009 partial replacement	9 (all on state land)
Milne Point (Oil) Pipeline	14	0.312	Oil	1984	10 (all on state land)
Milne Pt. Product Pipeline	8	0.277	Natural Gas Liquids	2000	10 (all on state land)
Nikiski Alaska Pipeline	10.75	0.188 to 0.625	Refined Liquid Petroleum Products	1976	52.8 (20 miles on state land)
North Fork Pipeline	4.5	.61 (duel Fiberspar)	Natural Gas	2010-2011	7.4 (6.6 miles on state land)
Northstar Gas Pipeline	10.15	0.307- (0.594 sub-sea)	Natural Gas	2000-2001	16 (all on state land)
Northstar Oil Pipeline	10.75	0.307 (0.594 sub-sea)	Crude Oil	2000-2001	17 (all on state land)
Nuigsut Natural Gas Pipeline	3.5	0.203	Natural Gas	1998-1999	14.4 (2.4 miles on state land)
Oliktok Pipeline	16	0.342- (0.750 in Floodplain)	Natural Gas	1981	28 (all on state land)
TAPS	48	0.462 to 0.562	Oil	1975-1977	800

**SPCO/DNR FY11 Surveillance Reports (by pipeline)**

Surveillance Number	ADL	Pipeline (PLMP #)	Section/Stipulation	#	Title	Observation
11-SPCO-S-031	415932	Alpine Diesel Pipeline	Stipulation	1.2.1	Communications	SAT
11-SPCO-S-032	415932	Alpine Diesel Pipeline	Stipulation	1.4.1	Quality Assurance	SAT
11-SPCO-S-033	415932	Alpine Diesel Pipeline	Stipulation	1.5.2, 1.5.3	Conduct of Operations	SAT
11-SPCO-S-034	415932	Alpine Diesel Pipeline	Stipulation	1.6.1	Surveillance and Monitoring	SAT
11-SPCO-S-035	415932	Alpine Diesel Pipeline	Stipulation	1.7.1	Health and Safety	SAT
11-SPCO-S-036	415932	Alpine Diesel Pipeline	Stipulation	1.8.1	Survey Monuments	SAT
11-SPCO-S-037	415932	Alpine Diesel Pipeline	Stipulation	1.10.1	Electronically Operated Devices	SAT
11-SPCO-S-038	415932	Alpine Diesel Pipeline	Stipulation	1.11.2	Regulation of Access	SAT
11-SPCO-S-039	415932	Alpine Diesel Pipeline	Stipulation	1.13.2	Storage	SAT
11-SPCO-S-040	415932	Alpine Diesel Pipeline	Stipulation	2.8.1	Right-of-Way Traffic	SAT
11-SPCO-S-053	415932	Alpine Diesel Pipeline	Stipulation	1.14.1 (1), (2), (3), (4)	Reporting	SAT
11-SPCO-S-021	415701	Alpine Oil Pipeline	Stipulation	1.2.1	Communications	SAT
11-SPCO-S-022	415701	Alpine Oil Pipeline	Stipulation	1.4.1	Quality Assurance	SAT
11-SPCO-S-023	415701	Alpine Oil Pipeline	Stipulation	1.5.2, 1.5.3	Conduct of Operations	SAT
11-SPCO-S-024	415701	Alpine Oil Pipeline	Stipulation	1.6.1	Surveillance and Monitoring	SAT
11-SPCO-S-025	415701	Alpine Oil Pipeline	Stipulation	1.7.1	Health and Safety	SAT
11-SPCO-S-026	415701	Alpine Oil Pipeline	Stipulation	1.8.1	Survey Monuments	SAT
11-SPCO-S-027	415701	Alpine Oil Pipeline	Stipulation	1.10.1	Electronically Operated Devices	SAT
11-SPCO-S-028	415701	Alpine Oil Pipeline	Stipulation	1.11.2	Regulation of Access	SAT
11-SPCO-S-029	415701	Alpine Oil Pipeline	Stipulation	1.13.2	Storage	SAT
11-SPCO-S-030	415701	Alpine Oil Pipeline	Stipulation	2.8.1	Right-of-Way Traffic	SAT
11-SPCO-S-054	415701	Alpine Oil Pipeline	Stipulation	1.14.1 (1), (2), (3), (4)	Reporting	SAT
11-SPCO-S-041	415857	Alpine Utility Pipeline	Stipulation	1.2.1	Communications	SAT
11-SPCO-S-042	415857	Alpine Utility Pipeline	Stipulation	1.4.1	Quality Assurance	SAT
11-SPCO-S-043	415857	Alpine Utility Pipeline	Stipulation	1.5.2, 1.5.3	Conduct of Operations	SAT
11-SPCO-S-044	415857	Alpine Utility Pipeline	Stipulation	1.6.1	Surveillance and Monitoring	SAT
11-SPCO-S-045	415857	Alpine Utility Pipeline	Stipulation	1.7.1	Health and Safety	SAT

**SPCO/DNR FY11 Surveillance Reports (by pipeline)**

Surveillance Number	ADL	Pipeline (PLMP #)	Section/Stipulation	#	Title	Observation
11-SPCO-S-046	415857	Alpine Utility Pipeline	Stipulation	1.8.1	Survey Monuments	SAT
11-SPCO-S-047	415857	Alpine Utility Pipeline	Stipulation	1.10.1	Electronically Operated Devices	SAT
11-SPCO-S-048	415857	Alpine Utility Pipeline	Stipulation	1.11.2	Regulation of Access	SAT
11-SPCO-S-049	415857	Alpine Utility Pipeline	Stipulation	1.13.2	Storage	SAT
11-SPCO-S-050	415857	Alpine Utility Pipeline	Stipulation	2.8.1	Right-of-Way Traffic	SAT
11-SPCO-S-055	415857	Alpine Utility Pipeline	Stipulation	1.14.1 (1), (2), (3), (4)	Reporting	SAT
11-SPCO-S-126	415472 & 415965	Badami Sales Oil & Utility	Stipulation	1.6.1	Surveillance and Monitoring	SAT
10-SPCO-S-106	415472	Badami Sales Oil Pipeline	Stipulation	2.10.1, 2.10.2, 2.10.3, 2.10.4, 2.10.5	Restoration, Revegetation, and Decommissioning	SAT
10-SPCO-S-107	415472	Badami Sales Oil Pipeline	Stipulation	2.11.1	Reporting, Prevention, Control, Cleanup, and Disposal of Oil and Hazardous Substances Discharge	SAT
10-SPCO-S-108	415472	Badami Sales Oil Pipeline	Stipulation	2.12.1	Cultural Resources	SAT
10-SPCO-S-145	415472	Badami Sales Oil Pipeline	Stipulation	1.6.1, 1.6.2	Surveillance and Monitoring	SAT
10-SPCO-S-146	415472	Badami Sales Oil Pipeline	Stipulation	2.3.1.2, 2.3.1.2, 2.3.3.1	Erosion and Sedimentation Control- General	SAT
10-SPCO-S-147	415472	Badami Sales Oil Pipeline	Stipulation	2.6.1	Big Game Movement	SAT
10-SPCO-S-148	415472	Badami Sales Oil Pipeline	Stipulation	2.10.1, 2.10.2, 2.10.3, 2.10.4, 2.10.5	Restoration, Revegetation, and Decommissioning	SAT
11-SPCO-S-074	415472	Badami Sales Oil Pipeline	Stipulation	1.6.2	Surveillance and Monitoring	SAT
11-SPCO-S-086	415472	Badami Sales Oil Pipeline	Section	28	Local Hire	SAT

**SPCO/DNR FY11 Surveillance Reports (by pipeline)**

Surveillance Number	ADL	Pipeline (PLMP #)	Section/Stipulation	#	Title	Observation
10-SPCO-S-142	415965	Badami Utility Pipeline	Stipulation	2.10.1, 2.10.2, 2.10.3, 2.10.4, 2.10.5	Restoration, Revegetation, and Decommissioning	SAT
10-SPCO-S-143	415965	Badami Utility Pipeline	Stipulation	2.11.1	Reporting, Prevention, Control, Cleanup, and Disposal of Oil and Hazardous Substances Discharge	SAT
10-SPCO-S-144	415965	Badami Utility Pipeline	Stipulation	2.12.1	Cultural Resources	SAT
10-SPCO-S-149	415965	Badami Utility Pipeline	Stipulation	1.6.1, 1.6.2	Surveillance and Monitoring	SAT
10-SPCO-S-150	415965	Badami Utility Pipeline	Stipulation	2.3.1.2, 2.3.1.2, 2.3.3.1	Erosion and Sedimentation Control-General	SAT
10-SPCO-S-151	415965	Badami Utility Pipeline	Stipulation	2.6.1	Big Game Movement	SAT
10-SPCO-S-152	415965	Badami Utility Pipeline	Stipulation	2.10.1, 2.10.2, 2.10.3, 2.10.4, 2.10.5	Restoration, Revegetation, and Decommissioning	SAT
11-SPCO-S-075	415965	Badami Utility Pipeline	Stipulation	1.6.2	Surveillance and Monitoring	SAT
11-SPCO-S-087	415965	Badami Utility Pipeline	Section	28	Local Hire	SAT
10-SPCO-S-109	410562	Endicott Pipeline	Stipulation	1.2.1	Applicability	SAT
10-SPCO-S-110	410562	Endicott Pipeline	Stipulation	1.3.1, 1.3.2, 1.3.8	Responsibilities	SAT
10-SPCO-S-111	410562	Endicott Pipeline	Stipulation	1.4.1	Communications	SAT
10-SPCO-S-112	410562	Endicott Pipeline	Stipulation	1.6.1	Design, Criteria, Plans and Programs	SAT
10-SPCO-S-113	410562	Endicott Pipeline	Stipulation	1.8.3	Quality Assurance and Control	SAT
10-SPCO-S-114	410562	Endicott Pipeline	Stipulation	1.9.1	Conduct of Operations	SAT
10-SPCO-S-115	410562	Endicott Pipeline	Stipulation	1.10.1	Surveillance and Monitoring	SAT
10-SPCO-S-116	410562	Endicott Pipeline	Stipulation	1.11.1	Health and Safety	SAT
10-SPCO-S-117	410562	Endicott Pipeline	Stipulation	1.17.1	Regulation of Access	SAT
10-SPCO-S-118	410562	Endicott Pipeline	Stipulation	3.4.1	Pipeline Corrosion	SAT
10-SPCO-S-132	410562	Endicott Pipeline	Stipulation	1.6.1	Design, Criteria, Plans and Programs	SAT

**SPCO/DNR FY11 Surveillance Reports (by pipeline)**

Surveillance Number	ADL	Pipeline (PLMP #)	Section/Stipulation	#	Title	Observation
10-SPCO-S-133	410562	Endicott Pipeline	Stipulation	1.8.2	Quality Assurance and Control	SAT
10-SPCO-S-134	410562	Endicott Pipeline	Stipulation	1.9.1	Conduct of Operations	SAT
10-SPCO-S-135	410562	Endicott Pipeline	Stipulation	1.10.1	Surveillance and Monitoring	SAT
10-SPCO-S-136	410562	Endicott Pipeline	Stipulation	1.17.1	Regulation of Access	SAT
11-SPCO-S-004	410562	Endicott Pipeline	Stipulation	1.2.1	Applicability	SAT
11-SPCO-S-005	410562	Endicott Pipeline	Stipulation	1.6.1	Design, Criteria, Plans and Programs	SAT
11-SPCO-S-006	410562	Endicott Pipeline	Stipulation	1.8.3	Quality Assurance and Control	SAT
11-SPCO-S-007	410562	Endicott Pipeline	Stipulation	1.9.1	Conduct of Operations	SAT
11-SPCO-S-008	410562	Endicott Pipeline	Stipulation	1.10.1	Surveillance and Maintenance	SAT
11-SPCO-S-009	410562	Endicott Pipeline	Stipulation	1.11.1	Health and Safety	SAT
11-SPCO-S-076	410562	Endicott Pipeline	Section	4	Covenants by Lessee	SAT
11-SPCO-S-077	410562	Endicott Pipeline	Stipulation	1.8.3	Quality Assurance and Control	SAT
11-SPCO-S-078	410562	Endicott Pipeline	Stipulation	1.10.1	Surveillance and Maintenance	SAT
10-SPCO-S-100	228162	Kenai Kachemak Pipeline	Section	15	Conduct of Operations	SAT
10-SPCO-S-101	228162	Kenai Kachemak Pipeline	Section	32	Local Hire	SAT
10-SPCO-S-102	228162	Kenai Kachemak Pipeline	Stipulation	1.6	Surveillance and Monitoring	SAT
10-SPCO-S-103	228162	Kenai Kachemak Pipeline	Stipulation	1.11	Regulation of Access	SAT
10-SPCO-S-104	228162	Kenai Kachemak Pipeline	Stipulation	1.12	Storage	SAT
10-SPCO-S-105	228162	Kenai Kachemak Pipeline	Stipulation	3.1.1.1	Pipeline System Standards	SAT
11-SPCO-S-091	228162	Kenai Kachemak Pipeline	Stipulation	1.13	Reporting	SAT
11-SPCO-S-093	228162	Kenai Kachemak Pipeline	Section	8	Covenants of Lessee	SAT
11-SPCO-S-094	228162	Kenai Kachemak Pipeline	Section	14	Plans and Permitting	SAT
11-SPCO-S-095	228162	Kenai Kachemak Pipeline	Stipulation	1.4	Quality Assurance	SAT
11-SPCO-S-096	228162	Kenai Kachemak Pipeline	Stipulation	1.11	Regulation of Access	SAT
11-SPCO-S-097	228162	Kenai Kachemak Pipeline	Stipulation	1.6	Surveillance and Monitoring	SAT
10-SPCO-S-172	409027	Kuparuk Extension	Stipulation	1.4.1	Communications	SAT
10-SPCO-S-173	409027	Kuparuk Extension	Stipulation	1.8.3	Quality Assurance and Control	SAT
10-SPCO-S-174	409027	Kuparuk Extension	Stipulation	1.9.1	Conduct of Operations	SAT
10-SPCO-S-175	409027	Kuparuk Extension	Stipulation	1.10.1	Surveillance and Maintenance	SAT
10-SPCO-S-176	409027	Kuparuk Extension	Stipulation	1.11.1	Health and Safety	SAT
10-SPCO-S-177	409027	Kuparuk Extension	Stipulation	3.4.1	Pipeline Corrosion	SAT
11-SPCO-S-064	409027	Kuparuk Extension	Section	4c	Covenants by Lessee	SAT

**SPCO/DNR FY11 Surveillance Reports (by pipeline)**

Surveillance Number	ADL	Pipeline (PLMP #)	Section/Stipulation	#	Title	Observation
11-SPCO-S-065	409027	Kuparuk Extension	Stipulation	1.3.3	Responsibilities	SAT
11-SPCO-S-066	409027	Kuparuk Extension	Stipulation	1.8.3	Quality Assurance and Control	SAT
11-SPCO-S-067	409027	Kuparuk Extension	Stipulation	1.10.1	Surveillance and Maintenance	SAT
11-SPCO-S-136	409027	Kuparuk Extension	Stipulation	1.3.1	Responsibilities	SAT
11-SPCO-S-137	409027	Kuparuk Extension	Stipulation	1.4.1	Communications	SAT
11-SPCO-S-138	409027	Kuparuk Extension	Stipulation	1.8.3	Quality Assurance and Control	SAT
11-SPCO-S-139	409027	Kuparuk Extension	Stipulation	1.9.1	Conduct of Operations	SAT
11-SPCO-S-140	409027	Kuparuk Extension	Stipulation	1.10.1	Surveillance and Maintenance	SAT
11-SPCO-S-141	409027	Kuparuk Extension	Stipulation	1.11.1	Health and Safety	SAT
11-SPCO-S-142	409027	Kuparuk Extension	Stipulation	1.14.1	Fire Prevention and Suppression	SAT
11-SPCO-S-143	409027	Kuparuk Extension	Stipulation	1.17.1	Regulation of Access	SAT
10-SPCO-S-178	402294	Kuparuk Pipeline	Stipulation	1.4.1	Communications	SAT
10-SPCO-S-179	402294	Kuparuk Pipeline	Stipulation	1.8.3	Quality Assurance and Control	SAT
10-SPCO-S-180	402294	Kuparuk Pipeline	Stipulation	1.9.1	Conduct of Operations	SAT
10-SPCO-S-181	402294	Kuparuk Pipeline	Stipulation	1.10.1	Surveillance and Maintenance	SAT
10-SPCO-S-182	402294	Kuparuk Pipeline	Stipulation	1.11.1	Health and Safety	SAT
10-SPCO-S-183	402294	Kuparuk Pipeline	Stipulation	3.4.1	Pipeline Corrosion	SAT
11-SPCO-S-068	402294	Kuparuk Pipeline	Section	4c	Covenants by Lessee	SAT
11-SPCO-S-069	402294	Kuparuk Pipeline	Stipulation	1.3.3	Responsibilities	SAT
11-SPCO-S-070	402294	Kuparuk Pipeline	Stipulation	1.8.3	Quality Assurance and Control	SAT
11-SPCO-S-071	402294	Kuparuk Pipeline	Stipulation	1.10.1	Surveillance and Maintenance	SAT
11-SPCO-S-128	402294	Kuparuk Pipeline	Stipulation	1.3.1	Responsibilities	SAT
11-SPCO-S-129	402294	Kuparuk Pipeline	Stipulation	1.4.1	Communications	SAT
11-SPCO-S-130	402294	Kuparuk Pipeline	Stipulation	1.8.3	Quality Assurance and Control	SAT
11-SPCO-S-131	402294	Kuparuk Pipeline	Stipulation	1.9.1	Conduct of Operations	SAT
11-SPCO-S-132	402294	Kuparuk Pipeline	Stipulation	1.10.1	Surveillance and Maintenance	SAT
11-SPCO-S-133	402294	Kuparuk Pipeline	Stipulation	1.11.1	Health and Safety	SAT
11-SPCO-S-134	402294	Kuparuk Pipeline	Stipulation	1.14.1	Fire Prevention and Suppression	SAT
11-SPCO-S-135	402294	Kuparuk Pipeline	Stipulation	1.17.1	Regulation of Access	SAT
11-SPCO-S-152	402294	Kuparuk Pipeline	Section	10a	Duty of LESSEE to Prevent or Abate	SAT
11-SPCO-S-153	402294	Kuparuk Pipeline	Stipulation	1.4.1	Communications	SAT
11-SPCO-S-154	402294	Kuparuk Pipeline	Stipulation	1.8.3	Quality Assurance and Control	SAT

**SPCO/DNR FY11 Surveillance Reports (by pipeline)**

Surveillance Number	ADL	Pipeline (PLMP #)	Section/Stipulation	#	Title	Observation
11-SPCO-S-155	402294	Kuparuk Pipeline	Stipulation	1.9.1	Conduct of Operations	SAT
11-SPCO-S-156	402294	Kuparuk Pipeline	Stipulation	1.10.1	Surveillance and Maintenance	SAT
11-SPCO-S-157	402294	Kuparuk Pipeline	Stipulation	1.11.1	Health and Safety	SAT
11-SPCO-S-158	402294	Kuparuk Pipeline	Stipulation	1.17.1	Regulation of Access	SAT
11-SPCO-S-159	402294	Kuparuk Pipeline	Stipulation	3.4.1	Pipeline Corrosion	SAT
10-SPCO-S-184	410221	Milne Point Oil Pipeline	Section	10a	Duty of LESSEE to Prevent or Abate	SAT
10-SPCO-S-185	410221	Milne Point Oil Pipeline	Stipulation	1.8.3	Quality Assurance and Control	SAT
10-SPCO-S-186	410221	Milne Point Oil Pipeline	Stipulation	1.10.1	Surveillance and Maintenance	UNSAT- Minor
10-SPCO-S-187	410221	Milne Point Oil Pipeline	Stipulation	1.11.1	Health and Safety	SAT
10-SPCO-S-188	410221	Milne Point Oil Pipeline	Stipulation	2.3.1.1	Erosion and Sedimentation Control- General	SAT
11-SPCO-S-079	410221	Milne Point Oil Pipeline	Section	4c	Covenants by Lessee	SAT
11-SPCO-S-080	410221	Milne Point Oil Pipeline	Stipulation	1.8.3	Quality Assurance and Control	SAT
11-SPCO-S-081	410221	Milne Point Oil Pipeline	Stipulation	1.10.1	Surveillance and Maintenance	SAT
10-SPCO-S-162	416172	Milne Point Products Pipeline	Stipulation	1.12.1, 1.12.2	Storage	SAT
10-SPCO-S-163	416172	Milne Point Products Pipeline	Stipulation	2.8.1, 2.8.2	Reporting, Prevention, Control, Cleanup, and Disposal of Oil and Hazardous Substances Discharge	SAT
10-SPCO-S-164	416172	Milne Point Products Pipeline	Stipulation	2.9.1	Cultural Resources	SAT
10-SPCO-S-189	416172	Milne Point Products Pipeline	Stipulation	1.4.1	Quality Assurance	SAT
10-SPCO-S-190	416172	Milne Point Products Pipeline	Stipulation	1.5.1	Conduct of Operations	SAT
10-SPCO-S-191	416172	Milne Point Products Pipeline	Stipulation	1.6.1	Surveillance and Monitoring	SAT
10-SPCO-S-192	416172	Milne Point Products Pipeline	Stipulation	2.2.1.1	Erosion and Sedimentation Control- General	SAT
11-SPCO-S-082	416172	Milne Point Products Pipeline	Stipulation	1.13.1 (1), (2), (3), (4)	Reporting	SAT
11-SPCO-S-088	416172	Milne Point Products Pipeline	Section	32	Local Hire	SAT

**SPCO/DNR FY11 Surveillance Reports (by pipeline)**

Surveillance Number	ADL	Pipeline (PLMP #)	Section/Stipulation	#	Title	Observation
10-SPCO-S-137	69354	Nikiski Alaska Pipeline	Section	6	Books, Accounts and Records; Access to Property and Records	SAT
10-SPCO-S-138	69354	Nikiski Alaska Pipeline	Section	17	Reservation of Certain Rights to the State	SAT
10-SPCO-S-139	69354	Nikiski Alaska Pipeline	Section	19	Duty of Lessee to Prevent or Abate	SAT
10-SPCO-S-140	69354	Nikiski Alaska Pipeline	Stipulation	1.12	Regulation of Public Access	SAT
10-SPCO-S-141	69354	Nikiski Alaska Pipeline	Stipulation	3.7	Pipeline Corrosion	SAT
11-SPCO-S-092	69354	Nikiski Alaska Pipeline	Section	6	Books, Accounts and Records; Access to Property and Records	SAT
11-SPCO-S-098	69354	Nikiski Alaska Pipeline	Section	6	Books, Accounts and Records; Access to Property and Records	SAT
11-SPCO-S-099	69354	Nikiski Alaska Pipeline	Section	9	Damage or Destruction to Leasehold or Other Property	SAT
11-SPCO-S-100	69354	Nikiski Alaska Pipeline	Section	17	Reservation of Certain Rights to the State	SAT
11-SPCO-S-101	69354	Nikiski Alaska Pipeline	Section	19	Duty of Lessee to Prevent or Abate	SAT
11-SPCO-S-102	69354	Nikiski Alaska Pipeline	Stipulation	1.15	Surveillance and Maintenance	SAT
11-SPCO-S-103	69354	Nikiski Alaska Pipeline	Stipulation	1.16	Conduct of Operations	SAT
11-SPCO-S-104	69354	Nikiski Alaska Pipeline	Stipulation	2.1.4	Sanitation and Waste Disposal	SAT
11-SPCO-S-105	69354	Nikiski Alaska Pipeline	Stipulation	3.7	Pipeline Corrosion	SAT
10-SPCO-S-165	230928	North Fork Pipeline	Section	6	Reservation of Certain Rights to the State	SAT
10-SPCO-S-166	230928	North Fork Pipeline	Section	8	Covenants of Lessee	SAT
10-SPCO-S-167	230928	North Fork Pipeline	Section	14	Plans and Permitting	SAT
10-SPCO-S-168	230928	North Fork Pipeline	Section	15	Conduct of Operations	SAT
10-SPCO-S-169	230928	North Fork Pipeline	Section	32	Local Hire	SAT
10-SPCO-S-170	230928	North Fork Pipeline	Stipulation	1.3.1	Construction Plan	SAT
10-SPCO-S-171	230928	North Fork Pipeline	Stipulation	1.11.2	Regulation of Access	SAT
10-SPCO-S-193	230928	North Fork Pipeline	Section	6	Reservation of Certain Rights to the State	SAT
10-SPCO-S-194	230928	North Fork Pipeline	Section	8	Covenants of Lessee	SAT
10-SPCO-S-195	230928	North Fork Pipeline	Section	15	Conduct of Operations	SAT

**SPCO/DNR FY11 Surveillance Reports (by pipeline)**

Surveillance Number	ADL	Pipeline (PLMP #)	Section/Stipulation	#	Title	Observation
11-SPCO-S-001	230928	North Fork Pipeline	Section	6	Reservation of Certain Rights to the State	SAT
11-SPCO-S-002	230928	North Fork Pipeline	Stipulation	1.3.1	Construction Plan	SAT
11-SPCO-S-003	230928	North Fork Pipeline	Stipulation	2.2.1.1.1	Erosion and Sedimentation Control	SAT
11-SPCO-S-051	230928	North Fork Pipeline	Section	6	Reservation of Certain Rights to the State	SAT
11-SPCO-S-052	230928	North Fork Pipeline	Section	15	Conduct of Operations	SAT
11-SPCO-S-060	230928	North Fork Pipeline	Section	6	Reservation of Certain Rights to the State	SAT
11-SPCO-S-061	230928	North Fork Pipeline	Section	15	Conduct of Operations	SAT
11-SPCO-S-062	230928	North Fork Pipeline	Stipulation	1.11.2	Regulation of Access	SAT
11-SPCO-S-063	230928	North Fork Pipeline	Stipulation	2.2.1.1	Erosion and Sedimentation Control	SAT
11-SPCO-S-072	230928	North Fork Pipeline	Section	6	Reservation of Certain Rights to the State	SAT
11-SPCO-S-073	230928	North Fork Pipeline	Section	15	Conduct of Operations	SAT
11-SPCO-S-106	230928	North Fork Pipeline	Section	6	Reservation of Certain Rights to the State	SAT
11-SPCO-S-107	230928	North Fork Pipeline	Section	13	Timely Construction and Operation	SAT
11-SPCO-S-108	230928	North Fork Pipeline	Section	14	Plans and Permitting	SAT
11-SPCO-S-109	230928	North Fork Pipeline	Stipulation	1.11.2	Regulation of Access	SAT
11-SPCO-S-089	415975	Northstar Gas Pipeline	Section	32	Local Hire	SAT
11-SPCO-S-118	415975	Northstar Gas Pipeline	Section	8d	Covenants of Lessee	SAT
11-SPCO-S-119	415975	Northstar Gas Pipeline	Section	15b	Conduct of Operations	SAT
11-SPCO-S-120	415975	Northstar Gas Pipeline	Section	15b	Communications	SAT
11-SPCO-S-121	415975	Northstar Gas Pipeline	Stipulation	1.4.1	Quality Assurance	SAT
11-SPCO-S-122	415975	Northstar Gas Pipeline	Stipulation	1.4.1	Quality Assurance and Control	SAT
11-SPCO-S-123	415975	Northstar Gas Pipeline	Stipulation	1.6.1	Surveillance and Monitoring	SAT
11-SPCO-S-083	415975	Northstar Gas Pipeline	Stipulation	1.14.1 (1), (2), (3), (4)	Reporting	SAT
10-SPCO-S-125	415700	Northstar Oil Pipeline	Section	9b	Lessee's Contractors, Agents and Employees	Partial UNSAT
10-SPCO-S-126	415700	Northstar Oil Pipeline	Section	15b	Conduct of Operations	Partial UNSAT

**SPCO/DNR FY11 Surveillance Reports (by pipeline)**

Surveillance Number	ADL	Pipeline (PLMP #)	Section/Stipulation	#	Title	Observation
10-SPCO-S-127	415700	Northstar Oil Pipeline	Stipulation	1.2.1	Communications	Partial UNSAT
10-SPCO-S-128	415700	Northstar Oil Pipeline	Stipulation	1.4.1	Quality Assurance	Partial UNSAT
10-SPCO-S-129	415700	Northstar Oil Pipeline	Stipulation	1.6.1	Surveillance and Monitoring	SAT
10-SPCO-S-130	415700	Northstar Oil Pipeline	Stipulation	1.13.2	Storage	SAT
10-SPCO-S-131	415700	Northstar Oil Pipeline	Stipulation	3.2.1	Pipeline Corrosion	SAT
11-SPCO-S-090	415700	Northstar Oil Pipeline	Section	32	Local Hire	SAT
11-SPCO-S-110	415700	Northstar Oil Pipeline	Section	8d	Covenants of Lessee	SAT
11-SPCO-S-111	415700	Northstar Oil Pipeline	Section	15b	Conduct of Operations	SAT
11-SPCO-S-112	415700	Northstar Oil Pipeline	Stipulation	1.2.1	Communications	SAT
11-SPCO-S-113	415700	Northstar Oil Pipeline	Stipulation	1.4.1	Quality Assurance	SAT
11-SPCO-S-114	415700	Northstar Oil Pipeline	Stipulation	1.5.1, 1.5.2	Conduct of Operations	SAT
11-SPCO-S-115	415700	Northstar Oil Pipeline	Stipulation	1.6.1	Surveillance and Monitoring	SAT
11-SPCO-S-117	415700	Northstar Oil Pipeline	Stipulation	2.5.3	Zones of Restricted Activity	SAT
11-SPCO-S-010	415700	Northstar Oil Pipeline	Stipulation	3.4.1	Pipeline Corrosion	SAT
11-SPCO-S-011	415700	Northstar Oil Pipeline	Section	15b	Conduct of Operations	SAT
11-SPCO-S-012	415700	Northstar Oil Pipeline	Stipulation	1.4.1	Quality Assurance	SAT
11-SPCO-S-013	415700	Northstar Oil Pipeline	Stipulation	1.6.1	Surveillance and Monitoring	SAT
11-SPCO-S-014	415700	Northstar Oil Pipeline	Stipulation	3.2.1	Pipeline Corrosion	SAT
11-SPCO-S-084	415700	Northstar Oil Pipeline	Stipulation	1.14.1 (1), (2), (3), (4)	Reporting	SAT
10-SPCO-S-153	416202	Nuiqsut Natural Gas Pipeline	Section	14d	Plans and Permitting	SAT
10-SPCO-S-154	416202	Nuiqsut Natural Gas Pipeline	Section	15b	Conduct of Operations	UNSAT
10-SPCO-S-155	416202	Nuiqsut Natural Gas Pipeline	Section	16a	Environmental Compliance	SAT
10-SPCO-S-156	416202	Nuiqsut Natural Gas Pipeline	Stipulation	1.2.1	Communications	SAT
10-SPCO-S-157	416202	Nuiqsut Natural Gas Pipeline	Stipulation	1.4.1	Quality Assurance	SAT
10-SPCO-S-158	416202	Nuiqsut Natural Gas Pipeline	Stipulation	1.6.1	Surveillance and Monitoring	SAT

**SPCO/DNR FY11 Surveillance Reports (by pipeline)**

Surveillance Number	ADL	Pipeline (PLMP #)	Section/Stipulation	#	Title	Observation
10-SPCO-S-159	416202	Nuqsut Natural Gas Pipeline	Stipulation	2.3.1.1, 2.3.1.2	Erosion and Sedimentation Control	SAT
10-SPCO-S-160	416202	Nuqsut Natural Gas Pipeline	Stipulation	2.8.1	Right-of-Way Traffic	SAT
10-SPCO-S-161	416202	Nuqsut Natural Gas Pipeline	Stipulation	3.2.1	Pipeline Corrosion	SAT
11-SPCO-S-085	416202	Nuqsut Natural Gas Pipeline	Stipulation	1.14.1 (1), (2), (3), (4), (5)	Reporting	SAT
10-SPCO-S-196	411731	Oliktok Pipeline	Stipulation	1.8.3	Quality Assurance and Control	SAT
10-SPCO-S-197	411731	Oliktok Pipeline	Stipulation	1.10.1	Surveillance and Maintenance	SAT
10-SPCO-S-198	411731	Oliktok Pipeline	Stipulation	3.4.1	Pipeline Corrosion	SAT
11-SPCO-S-056	411731	Oliktok Pipeline	Section	4c	Covenants by Lessee	SAT
11-SPCO-S-057	411731	Oliktok Pipeline	Stipulation	1.3.3	Responsibilities	SAT
11-SPCO-S-058	411731	Oliktok Pipeline	Stipulation	1.8.3	Quality Assurance and Control	SAT
11-SPCO-S-059	411731	Oliktok Pipeline	Stipulation	1.10.1	Surveillance and Maintenance	SAT
11-SPCO-S-144	411731	Oliktok Pipeline	Stipulation	1.3.3	Responsibilities	SAT
11-SPCO-S-145	411731	Oliktok Pipeline	Stipulation	1.4.1	Communications	SAT
11-SPCO-S-146	411731	Oliktok Pipeline	Stipulation	1.8.3	Quality Assurance and Control	SAT
11-SPCO-S-147	411731	Oliktok Pipeline	Stipulation	1.9.1	Conduct of Operations	SAT
11-SPCO-S-148	411731	Oliktok Pipeline	Stipulation	1.10.1	Surveillance and Maintenance	SAT
11-SPCO-S-149	411731	Oliktok Pipeline	Stipulation	1.11.1	Health and Safety	SAT
11-SPCO-S-150	411731	Oliktok Pipeline	Stipulation	1.14.1	Fire Prevention and Suppression	SAT
11-SPCO-S-151	411731	Oliktok Pipeline	Stipulation	1.17.1	Regulation of Access	SAT
10-TAPS-S-061	63574	TAPS	Section	16	Construction Plans and Quality Assurance	SAT
10-TAPS-S-062	63574	TAPS	Section	22	Duty of Lessee to Prevent and Abate	SAT
10-TAPS-S-063	63574	TAPS	Stipulation	1.18	Surveillance and Maintenance	SAT
10-TAPS-S-080	63574	TAPS	Section	22	Duty of Lessee to Prevent or Abate	SAT
10-TAPS-S-081	63574	TAPS	Stipulation	1.21.1	Conduct of Operations	SAT
10-TAPS-S-130	63574	TAPS	Section	10	Damage and Destruction of Leasehold or Other Property	SAT
10-TAPS-S-131	63574	TAPS	Stipulation	2.4.2.2	Stabilization	SAT

**SPCO/DNR FY11 Surveillance Reports (by pipeline)**

Surveillance Number	ADL	Pipeline (PLMP #)	Section/Stipulation	#	Title	Observation
10-TAPS-S-132	63574	TAPS	Stipulation	2.4.4.1	Seeding and Planting	SAT
10-TAPS-S-133	63574	TAPS	Stipulation	2.5.4.1	Big Game Movement	SAT
10-TAPS-S-134	63574	TAPS	Stipulation	2.12	Restoration	SAT
10-TAPS-S-146	63574	TAPS	Section	6	Books, Accounts and Records; Access to Property and Records	SAT
10-TAPS-S-147	63574	TAPS	Section	10	Damage and Destruction of Leasehold or Other Property	SAT
10-TAPS-S-148	63574	TAPS	Section	17	Reservation of Certain Rights to the State	SAT
10-TAPS-S-149	63574	TAPS	Section	22	Duty of Lessee to Prevent or Abate	SAT
10-TAPS-S-150	63574	TAPS	Stipulation	1.19	Housing and Quarters	SAT
10-TAPS-S-151	63574	TAPS	Stipulation	1.21	Conduct of Operations	SAT
10-TAPS-S-172	63574	TAPS	Section	6	Books, Accounts and Records; Access to Property and Records	SAT
10-TAPS-S-173	63574	TAPS	Section	16	Construction Plans and Quality Assurance	UNSAT
10-TAPS-S-174	63574	TAPS	Stipulation	3.3.2.1	Special Standards	SAT
11-TAPS-S-020	63574	TAPS	Section	16	Construction Plans and Quality Assurance	SAT
11-TAPS-S-021	63574	TAPS	Stipulation	1.2	Health and Safety	SAT
11-TAPS-S-022	63574	TAPS	Stipulation	1.21	Conduct of Operations	SAT
11-TAPS-S-023	63574	TAPS	Section	16	Construction Plans and Quality Assurance	SAT
11-TAPS-S-024	63574	TAPS	Section	16	Construction Plans and Quality Assurance	UNSAT-Minor
11-TAPS-S-025	63574	TAPS	Section	16	Construction Plans and Quality Assurance	UNSAT-Minor
11-TAPS-S-029	63574	TAPS	Stipulation	1.2.4	Responsibilities	SAT
11-TAPS-S-030	63574	TAPS	Stipulation	2.4.2.1	Stabilization	SAT
10-TAPS S-179	418676	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 41-IR)	SAT
10-TAPS S-180	418012	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 41-3)	SAT

**SPCO/DNR FY11 Surveillance Reports (by pipeline)**

Surveillance Number	ADL	Pipeline (PLMP #)	Section/Stipulation	#	Title	Observation
10-TAPS S-181	417721	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 49-3)	SAT
10-TAPS S-182	418664	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 53-2)	SAT
10-TAPS S-183	230710	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 3-1.1)	SAT
10-TAPS S-184	230460	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 3-2)	SAT
10-TAPS S-185	230047	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 7-1M)	SAT
10-TAPS S-186	230711	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 7-1M)	SAT
10-TAPS S-187	230398	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 14-0)	SAT
10-TAPS-S-152	418015	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 119-4)	SAT
10-TAPS-S-153	418032	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 119-4)	SAT
10-TAPS-S-154	418014	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 98-3.1)	SAT
10-TAPS-S-155	LAS 25564	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 71-1HR)	SAT
10-TAPS-S-156	LAS 26925	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 73-1R)	SAT
10-TAPS-S-157	LAS 25636	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 74-2HR)	SAT
10-TAPS-S-158	LAS 27194	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 75-1R)	SAT
10-TAPS-S-159	418669	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 76-2.1)	SAT
10-TAPS-S-160	418013	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 63-1)	SAT

**SPCO/DNR FY11 Surveillance Reports (by pipeline)**

Surveillance Number	ADL	Pipeline (PLMP #)	Section/Stipulation	#	Title	Observation
10-TAPS-S-161	418278	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 63-4)	SAT
10-TAPS-S-162	417118	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 65-1M)	SAT
10-TAPS-S-163	418605	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 67-1)	SAT
10-TAPS-S-164	LAS 26922	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 68-1)	SAT
10-TAPS-S-165	417854	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 68-4)	SAT
10-TAPS-S-166	418025	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 69-1R)	SAT
10-TAPS-S-167	LAS 27195	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 70-0.0)	SAT
10-TAPS-S-168	418667	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 71-0)	SAT
10-TAPS-S-169	418668	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 71-8)	SAT
10-TAPS-S-170	418666	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 66-1R)	SAT
10-TAPS-S-171	LAS 27192	TAPS	Stipulation	2.6	Operation Material Sites Surveillance (OMS 35-1.2)	SAT
11-TAPS-S-017	63574	TAPS (MP 120)	Section	22	Duty of Lessee to Prevent or Abate	SAT
11-TAPS-S-004	63574	TAPS (PS 1)	Stipulation	1.2.3	Responsibilities	SAT
10-TAPS-S-058	63574	TAPS (PS 3)	Section	6	Books, Accounts and Records; Access to Property and Records	SAT
10-TAPS-S-059	63574	TAPS (PS 3)	Stipulation	1.18.3	Surveillance and Maintenance	SAT
10-TAPS-S-060	63574	TAPS (PS 3)	Stipulation	1.21.1	Conduct of Operations	UNSAT- Minor
11-TAPS-S-003	63574	TAPS (PS 3)	Section	22	Duty of Lessee to Prevent or Abate	SAT
11-TAPS-S-031	63574	TAPS (PS 5 and 7)	Section	17	Reservation of Certain Rights to the State	SAT

**SPCO/DNR FY11 Surveillance Reports (by pipeline)**

Surveillance Number	ADL	Pipeline (PLMP #)	Section/Stipulation	#	Title	Observation
10-TAPS-S-175	63574	TAPS (PS 5)	Section	6	Books, Accounts and Records; Access to Property and Records	SAT
11-TAPS-S-001	63574	TAPS (PS 5)	Section	22	Duty of Lessee to Prevent or Abate	SAT
11-TAPS-S-027	63574	TAPS (PS 5)	Stipulation	1.18.1	Surveillance and Maintenance	SAT
11-TAPS-S-028	63574	TAPS (PS 5)	Stipulation	3.9.1	Construction and Operation	SAT
10-TAPS-S-053	63574	TAPS (PS 7)	Section	16	Construction Plans and Quality Assurance	SAT
10-TAPS-S-054	63574	TAPS (PS 7)	Section	22	Conduct of Operations	UNSAT
10-TAPS-S-057	63574	TAPS (PS 7)	Stipulation	1.20.1	Health and Safety	SAT
10-TAPS-S-055	63574	TAPS (PS 7)	Stipulation	1.20.1	Health and Safety	SAT

**SPCO/DNR FY11 Compliance Reports and Assessments (by pipeline)**

Report/Assessment Number	Pipeline System	Topic	Signed Date
11-SPCO-R-005	Alpine Oil, Utility & Diesel Pipeline	Alpine Annual Ground Inspection	2/15/2011
10-SPCO-R-026	Badami Sales Oil and Utility Pipelines	Badami River Crossings Sales Oil Pipeline	10/21/2010
11-SPCO-R-011	Badami Sales Oil and Utility Pipelines	Badami WSS	9/15/2011
10-SPCO-R-024	Badami Utility Pipeline	Badami Release of Interest	10/19/2010
10-SPCO-R-015	Endicott Oil Pipeline	Endicott Hot Tapping	8/25/2010
10-SPCO-R-021	Endicott Oil Pipeline	Endicott FS2 Issue	9/14/2010
10-SPCO-R-012	Kenai Kachemak Pipeline	KKPL Valve Testing and ROW Surveillance	8/12/2010
11-SPCO-R-010	Kenai Kachemak Pipeline	KKPL - Enstar Tie-in & Document Check	4/28/2011
11-SPCO-R-018	Kuparuk Pipeline	KPL In-Line Inspection Observations	5/25/2011
10-SPCO-R-032	Kuparuk Pipeline, Kuparuk Extension and Oliktok Pipeline	KPE & OPL Hot tap/Cpn Install/Pull Program	1/14/2011
11-SPCO-R-017	Kuparuk Pipeline, Kuparuk Extension and Oliktok Pipeline	KPL, KPE, OPL Surveillance Methods	6/28/2011
10-SPCO-R-028	Milne Point Oil and Products Pipelines	Milne Point Pipelines ROW Surveillance	1/4/2011
10-SPCO-R-027	Milne Point Products	Milne Point Pipelines Release of Interest	11/24/2010
10-SPCO-R-023	Nikiski Alaska Pipeline	Nikiski Cathodic Protection Testing	10/12/2010
11-SPCO-R-013	Nikiski Alaska Pipeline	Tesoro CP Anode Bed Install	4/21/2011
10-SPCO-R-029	North Fork Pipeline	North Fork Pipeline	11/9/2010
10-SPCO-R-034	North Fork Pipeline	North Fork Pipeline Phase 1 Construction	12/22/2010
11-SPCO-R-001	North Fork Pipeline	North Fork Pipeline Phase 2 Construction	1/7/2011
11-SPCO-R-006	North Fork Pipeline	North Fork Pipeline Phase 2 Construction	2/7/2011
11-SPCO-R-007	North Fork Pipeline	North Fork Pipeline Phase 2 Construction	2/18/2011
11-SPCO-R-009	North Fork Pipeline	North Fork Pipeline Phase 2 Construction	2/28/2011
11-SPCO-R-015	North Fork Pipeline	North Fork Pre-Start Up	5/2/2011
11-SPCO-R-014	Northstar Oil and Gas Pipelines	Northstar WSS	6/2/2011
11-SPCO-R-003	Northstar Oil Pipeline and Endicott Oil Pipeline	Northstar/Endicott Follow-up Coupon Program	1/27/2011
10-SPCO-R-016	Northstar Oil, Badami Sales Oil	Northstar and Badami Hot Tapping	9/21/2010
10-SPCO-R-017	Nuiqsut Natural Gas Pipeline	Nuiqsut Surveillance & Maintenance Inspection	10/26/2010

**SPCO/DNR FY11 Compliance Reports and Assessments (by pipeline)**

<b>Report/Assessment Number</b>	<b>Pipeline System</b>	<b>Topic</b>	<b>Signed Date</b>
10-SPCO-R-030	TAPS	TAPS ROW Surveillance	11/29/2011
10-SPCO-R-011	TAPS	TAPS PS 7 Scheduled Shutdown	8/6/2010
10-SPCO-R-013	TAPS	TAPS PS 3 Drawings Check	8/16/2010
10-SPCO-R-014	TAPS	OCC Field Trip	8/31/2010
10-SPCO-R-022	TAPS	TAPS July Shutdown Atigun Pass	8/31/2010
10-SPCO-R-025	TAPS	TAPS ROW Revegetation	10/19/2010
10-SPCO-R-031	TAPS	TAPS SIPPS Upgrades and Testing	11/29/2010
10-SPCO-R-033	TAPS	TAPS PS5 Piggings Incident	12/13/2010
11-SPCO-R-002	TAPS	TAPS PS 5 Injection Bypass Pipe	1/7/2011
11-SPCO-R-008	TAPS	TAPS PS 1, 3 and 4	2/18/2011
11-SPCO-R-012	TAPS	TAPS PS 1 to Fairbanks	3/31/2011
11-SPCO-R-016	TAPS	TAPS PS 5 ROW	4/28/2011
11-SPCO-R-019	TAPS	TAPS ROW Site Prep	5/6/2011
11-SPCO-R-020	TAPS	TAPS PS 5-7	6/6/2011

**SPCO/DNR FY11 Engineering Opinions & Reports**

<b>Report/Assessment Number</b>	<b>ADL</b>	<b>Pipeline</b>	<b>Title</b>
11-SPCO-E-002		CD5	CD5 Opinion
11-SPCO-E-008	410562	Endicott Pipeline	Prudhoe Bay
11-SPCO-E-007	402294	Kuparuk	Kuparuk Spring Breakup Trip Report, May 30-31, 2011
11-SPCO-E-005		Point Thomson	Point Thomson Confidentiality
11-SPCO-E-001	63574	TAPS	11-SPCO-E-001
11-SPCO-E-006	63574	TAPS	PLMP 47.2 Spur Dike 6, 7, 8 Breaches
11-SPCO-E-003	63574	TAPS	Opinion on ILI Data
11-SPCO-E-004	63574	TAPS	Stamped Dwg Tesoro

**SPCO/ADF&G FY11 TAPS Surveillance Reports**

<b>Report Number</b>	<b>ADL</b>	<b>TAPS PLMP</b>	<b>Stipulation</b>	<b>Title</b>	<b>Observation</b>
10-TAPS-S-070	FF012505	PLMP 480.7	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Culvert Inspection and Compliance with AS 16.05.841	SAT
10-TAPS-S-071	FF012505	PLMP 484.93	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Culvert Inspection and Compliance with AS 16.05.841	SAT
10-TAPS-S-072	63574	PLMP 488.23	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-073	63574	PLMP 239.75	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-074	63574	PLMP 236.5	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Culvert Inspection and Compliance with AS 16.05.841	SAT
10-TAPS-S-075	63574	PLMP 236.15	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Culvert Inspection and Compliance with AS 16.05.841	SAT
10-TAPS-S-076	FF012505	PLMP 186	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Culvert Inspection and Compliance with AS 16.05.841	SAT
10-TAPS-S-077	FF012505	PLMP 200.17	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-078	FF012505	PLMP 344.96	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-079	63574	PLMP 362.72	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	COTS
10-TAPS-S-082	63574	PLMP 424.45	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-083	63574	PLMP 423.68	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-084	FF012505	PLMP 325.25	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-085	FF012505	PLMP 270.41	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-086	AA05847	PLMP 679.9	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-087	AA05847	PLMP 680.1	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Culvert Inspection and Compliance with AS 16.05.841	COTS
10-TAPS-S-088	AA05847	PLMP 680.5	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Culvert Inspection and Compliance with AS 16.05.841	SAT
10-TAPS-S-089	63574	PLMP 606.36	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT

**SPCO/ADF&G FY11 TAPS Surveillance Reports**

<b>Report Number</b>	<b>ADL</b>	<b>TAPS PLMP</b>	<b>Stipulation</b>	<b>Title</b>	<b>Observation</b>
10-TAPS-S-090	63574	PLMP 606.83	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-091	63574	PLMP 607.3	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-092	63574	PLMP 607.05	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-093	AA05847	PLMP 618.19	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	UNSAT
10-TAPS-S-094	AA05847	PLMP 642.48	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Culvert Inspection and Compliance with AS 16.05.841	SAT
10-TAPS-S-095	AA05847	PLMP 659.69	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Culvert Inspection and Compliance with AS 16.05.841	SAT
10-TAPS-S-096	FF012505	PLMP 145.67	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-097	FF012505	PLMP 154.12	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-098	FF012505	PLMP 153.59	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-099	FF012505	PLMP 133.48	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-100	FF012505	PLMP 134.01	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-101	63574	PLMP 100.81	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-102	63574	PLMP 100.89	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-103	63574	PLMP 99.99	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-104	63574	PLMP 115.76	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-105	FF012505	PLMP 124.8	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-106	FF012505	PLMP 127.17	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-107	FF012505	PLMP 128.62	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT

**SPCO/ADF&G FY11 TAPS Surveillance Reports**

<b>Report Number</b>	<b>ADL</b>	<b>TAPS PLMP</b>	<b>Stipulation</b>	<b>Title</b>	<b>Observation</b>
10-TAPS-S-108	FF012505	PLMP 178.78	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-109	AA05847	PLMP 576.35	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-110	AA05847	PLMP 577.76	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-111	AA05847	PLMP 578.37	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-112	AA05847	PLMP 679.9	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	COTS
10-TAPS-S-113	AA05847	PLMP 731.95	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-114	AA05847	PLMP 731.78	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-115	AA05847	PLMP 731.69	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-116	AA05847	PLMP 731.26	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-117	AA05847	PLMP 731.16	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-118	AA05847	PLMP 730.85	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	UNSAT
10-TAPS-S-119	AA05847	PLMP 730.72	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-120	AA05847	PLMP 730.47	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-121	AA05847	PLMP 730.25	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-122	AA05847	PLMP 730.17	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-123	63574	PLMP 774.2	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-124	63574	PLMP 791.9	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-125	63574	PLMP 790.9	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT

**SPCO/ADF&G FY11 TAPS Surveillance Reports**

<b>Report Number</b>	<b>ADL</b>	<b>TAPS PLMP</b>	<b>Stipulation</b>	<b>Title</b>	<b>Observation</b>
10-TAPS-S-126	63574	PLMP 790.2	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Culvert Inspection and Compliance with AS 16.05.841	SAT
10-TAPS-S-127	63574	PLMP 789.4	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Culvert Inspection and Compliance with AS 16.05.841	SAT
10-TAPS-S-128	63574	PLMP 797.02	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Low Water Crossing Inspection & Compliance with AS 16.05.841	SAT
10-TAPS-S-129	63574	PLMP 784	2.5.1.1, 2.4.3.1, 2.4.4.1 and 2.12.1	Culvert Inspection and Compliance with AS 16.05.841	UNSAT

**SPCO/DOLWD FY11 TAPS Safety Surveillance Reports**

Report Number	Location	Stip	Type	Observation
10-TAPS-S-056	PS 09	1.20	Work Site Safety Inspection	OBSERVATION - The drain down piping outside the south exit of the manifold building could create a trip and fall hazard. Employees are instructed to walk around the piping however it is convenient to step over pipe when using the exit.  Temporary stairs with a landing over the piping were built prior to shutdown.
10-TAPS-S-064	PS 09	1.20	Work Site Safety Inspection	Observed removing of gravel from Tank 190 containment.  No discrepancies noted.
10-TAPS-S-065	PLMP 560	1.20	Work Site Safety Inspection	Observed Ammonia Crew release ammonia from VSMS and refill with CO2.  No discrepancies noted.
10-TAPS-S-066	PLMP 626	1.20	Work Site Safety Inspection	Observed Load Cell Crew weight and adjust pipe on VSMS.  No discrepancies noted.
10-TAPS-S-067	PLMP 712	1.20	Work Site Safety Inspection	Observed Realignment Crew set up to align the shoe on the HSM.  No discrepancies noted.
10-TAPS-S-068	PLMP 758.9	1.20	Work Site Safety Inspection	This is a Hamilton Construction project. Observed excavation of the pipe under the road way and removal of the casing.  No discrepancies noted.
10-TAPS-S-069	PLMP 765.24	1.20	Work Site Safety Inspection	This is a Hamilton Construction project. Observed excavation of the pipe under the road way and removal of the casing.  No discrepancies noted.

**SPCO/DOLWD FY11 TAPS Safety Surveillance Reports**

<b>Report Number</b>	<b>Location</b>	<b>Stip</b>	<b>Type</b>	<b>Observation</b>
10-TAPS-S-135	VMT West Metering	1.20	Work Site Safety Inspection	This project, Z654, was corrosion repair of crude pipeline located at West Metering. Crews were staging equipment and preparing for lifting the pipe one inch to remove the piping supports.  No discrepancies were noted.
10-TAPS-S-136	PS 01	1.20	Annual Safety Inspection	The Fire Extinguisher in the mechanical room on 2nd floor of the PLQ was not inspected within the last month. The last inspection was on September 10, 2010. Recommend this fire extinguisher be removed because there is one outside the door of the mechanical room.  This discrepancy has been corrected.
10-TAPS-S-137	PS 02	1.20	Annual Safety Inspection	No Discrepancies Noted
10-TAPS-S-138	PS 03	1.20	Annual Safety Inspection	No Discrepancies Noted
10-TAPS-S-141	PS 05	1.20	Annual Safety Inspection	The noise hazard in the Sewage Treatment Plant was previously identified in JPO Surveillance 08-TAPS-S-081 has been corrected.
10-TAPS-S-145	PS 05 Prospect Airport	1.20	Work Site Safety Inspection	A crew installing a new control tower at the Prospect Airport was inspected.  No Discrepancies noted
10-TAPS-S-144	PLMP 238 DRA Facility	1.20	Work Site Safety Inspection	A crew installing a new fire suppression system in the DRA facility was inspected.  No Discrepancies noted
10-TAPS-S-141	PS 05	1.20	Annual Safety Inspection	Contrary to this requirement, the emergency lighting in Fly Camp B was inoperative.  This hazard has been corrected.

**SPCO/DOLWD FY11 TAPS Safety Surveillance Reports**

<b>Report Number</b>	<b>Location</b>	<b>Stip</b>	<b>Type</b>	<b>Observation</b>
10-TAPS-S-140	PLMP 238 DRA Facility	1.20	Annual Safety Inspection	Contrary to this requirement, the step to the portable toilet exceeded seven inches.  This hazard has been corrected.
10-TAPS-S-139	PS 04	1.20	Annual Safety Inspection	A vacuum cleaner cord in the Equipment Shop had a broken ground prong.  This discrepancy has been corrected.
10-TAPS-S-139	PS 04	1.20	Annual Safety Inspection	The Portable Eyewash bottles in Sewage Treatment Plant and Fly Camp B had expired.  This discrepancy has been corrected.
10-TAPS-S-142	PS 06	1.20	Annual Safety Inspection	The Baseline Crew should be complemented for the ‘Excellent Housekeeping’ observed throughout the facility.
10-TAPS-S-143	PS 07	1.20	Annual Safety Inspection	No Discrepancies Noted
10-TAPS-S-176	PS 05	1.20	Work Site Safety Inspection	Conducted a safety inspection of welding and hot tap preparations to remove the stuck scraper pig. Reviewed the site specific safety plan and critical lifting plans.  No discrepancies were noted.
10-TAPS-S-177	PLMP 238 DRA Facility	1.20	Work Site Safety Inspection	Conducted a safety inspection of the new fire suppression system.  No discrepancies were noted.
10-TAPS-S-178	PLMP 592	1.20	Work Site Safety Inspection	Conducted a safety inspection of two pipeline excavations at PLMP 592.5 and PLMP 592.51.  No discrepancies were noted.

**SPCO/DOLWD FY11 TAPS Safety Surveillance Reports**

<b>Report Number</b>	<b>Location</b>	<b>Stip</b>	<b>Type</b>	<b>Observation</b>
11-TAPS-S-002	PS 01	1.20	Work Site Safety Inspection	Conducted safety inspections, monitored safety activities, and monitored operations of an unscheduled shutdown to install a bypass pipe due to a leak in the booster pump piping.  No discrepancies noted.
11-TAPS-006	PLMP 516	1.20	Work Site Safety Inspection	Contrary to this requirement, the step to the portable toilet exceeded seven inches.  This hazard has been corrected.
11-TAPS-S-007	PS 08	1.20	Annual Safety Inspection	No Discrepancies Noted
11-TAPS-S-008	PS 10	1.20	Annual Safety Inspection	Contrary to this requirements, the eye wash in battery room next to control room expired 10-2010.  This discrepancy has been corrected.
11-TAPS-S-005	PLMP 495	1.20	Work Site Safety Inspection	Conducted a work site safety inspection of two pipeline excavations at PLMP 495.13  No discrepancies were noted.
11-TAPS-S-011	Nordale Yard	1.20	Annual Safety Inspection	Contrary to this requirement, pad locks were used to lock exit doors of the Baseline Shop. At the time of inspection, one of the two exit doors was locked and the building was occupied.  This discrepancy has been corrected.
11-TAPS-S-009	PS 09	1.20	Annual Safety Inspection	Contrary to this requirement, the two Project Office Trailers did not have level landings.  This discrepancy has been corrected.

**SPCO/DOLWD FY11 TAPS Safety Surveillance Reports**

<b>Report Number</b>	<b>Location</b>	<b>Stip</b>	<b>Type</b>	<b>Observation</b>
11-TAPS-S-010	North Pole Metering	1.20	Annual Safety Inspection	No Discrepancies Noted
11-TAPS-S-013	FBX Rotating Equipment Shop	1.20	Annual Safety Inspection	No Discrepancies Noted
11-TAPS-S-014	FBX FAB Shop	1.20	Annual Safety Inspection	No Discrepancies Noted
11-TAPS-S-012	FBX Equipment Shop	1.20	Annual Safety Inspection	No Discrepancies Noted
11-TAPS-S-015	Van Horn Facility	1.20	Annual Safety Inspection	No Discrepancies Noted
11-TAPS-S-016	FBX Materials Warehouse	1.20	Annual Safety Inspection	No Discrepancies Noted
11-TAPS-S-018	PS 04	1.20	Work Site Safety Inspection	Conducted a work site safety inspection of the Black Start Generator installation project and other HCC project activities at PS 4.  No Discrepancies Noted
11-TAPS-S-019	PS 01	1.20	Work Site Safety Inspection	Conducted a work site safety inspection of the HCC project activities at PS 1.  There was one observation that, if not corrected, could lead to a safety violation. The door from the metering building to the laboratory cannot open fully because of the new bypass piping that was recently installed. Project F804 includes reconfiguration of the door and a replacement has been ordered. This hazard should be completed by June 30, 2011. We will follow-up on this item until it's corrected.
11-TAPS-S-034	VMT Laboratory	1.20	Annual Safety Inspection	No Discrepancies Noted
11-TAPS-S-039	VMT Maintenance	1.20	Annual Safety Inspection	No Discrepancies Noted

**SPCO/DOLWD FY11 TAPS Safety Surveillance Reports**

Report Number	Location	Stip	Type	Observation
11-TAPS-S-037	FBX Materials Warehouse	1.20	Annual Safety Inspection	No Discrepancies Noted
11-TAPS-S-038	VMT Equipment Shop	1.20	Annual Safety Inspection	No Discrepancies Noted
11-TAPS-S-035	VMT Upper 19	1.20	Annual Safety Inspection	No Discrepancies Noted
11-TAPS-S-033	VMT TCC	1.20	Annual Safety Inspection	No Discrepancies Noted
11-TAPS-S-032	SERVS	1.20	Annual Safety Inspection	Contrary to this requirement, the eye bottle in first floor janitor's closet expired 1/2011  This discrepancy has been corrected.
11-TAPS-S-036	VMT Lower 19	1.20	Annual Safety Inspection	No Discrepancies Noted
11-TAPS-S-041	PS 12	1.20	Annual Safety Inspection	No Discrepancies Noted
11-TAPS-S-040	PS 11	1.20	Annual Safety Inspection	Contrary to this requirement, the eye was bottles through the facility had expired.  This discrepancy has been corrected.
11-TAPS-S-040	PS 11	1.20	Annual Safety Inspection	Contrary to this requirement, the rear step to the guard shack near the gate exceeded seven (7) inches.  This discrepancy has been corrected.
11-TAPS-S-047	VMT Marine	1.20	Annual Safety Inspection	No Discrepancies Noted
11-TAPS-S-043	VMT BWT	1.20	Annual Safety Inspection	Contrary to this requirement, the north east step to PDC 14 exceeded 14 inches.  This discrepancy has been corrected.

**SPCO/DOLWD FY11 TAPS Safety Surveillance Reports**

<b>Report Number</b>	<b>Location</b>	<b>Stip</b>	<b>Type</b>	<b>Observation</b>
11-TAPS-S-046	VMT OMS	1.20	Annual Safety Inspection	Contrary to this requirement, the following PDCs did not have a landing.  East side of PDC 6A and PDC 6B located near East Metering  East side of PDC 13 and PDC 14 located near West Metering  This discrepancy has been corrected.
11-TAPS-S-044	VMT VTO	1.20	Annual Safety Inspection	No Discrepancies Noted
11-TAPS-S-042	VMT Power Vapor	1.20	Annual Safety Inspection	No Discrepancies Noted
11-TAPS-S-045	Operations Office Building	1.20	Annual Safety Inspection	No Discrepancies Noted
11-TAPS-S-048	PS 01	1.20	Work Site Safety Inspection	Contrary to this requirement, a fire extinguisher in the HCC electric shop was blocked with tools and not readily accessible.  This hazard has been corrected
11-TAPS-S-048	PS 01	1.20	Work Site Safety Inspection	Contrary to this requirement, the step to the portable toilet exceeded seven inches.  This hazard has been corrected.
11-TAPS-S-049	PS 04	1.20	Work Site Safety Inspection	Conducted a work site safety inspection of construction activities.  No discrepancies noted

**SPCO/DOLWD FY11 TAPS Electrical Inspection Reports**

<b>Inspection Report #</b>	<b>TAPS Location and Inspection Description</b>	<b>Inspection Date</b>
DO071210-1	Pump Station 8, Courtesy Inspection	7/12/2010
DO071310-1	Pump Station 9 / DRB, Replacement of failed light fixtures	7/13/2010
DO071310-2	Pump Station 9 / DRB, Security and Communications upgrades	7/13/2010
DO071310-3	Pump Station 10, Courtesy Inspection	7/13/2010
DO071310-4	Pump Station 11 / GRB, Security and Communications upgrades	7/13/2010
DO071410-1	Pump Station 12, New 480 volt electrical service	7/14/2010
DO071410-2	VMT, VTO remodel for security and EMT areas on first floor	7/14/2010
DO071410-3	VMT, Remodel to add office space and upgrade break room in the man-camp	7/14/2010
DO072710-1	Pump Station 3, JPO tagging exercise for Tammas Brown	7/27/2010
DO072710-2	Pump Station 3, Post SR work	7/27/2010
DO072710-3	Pump Station 4, Post SR work	7/27/2010
DO072710-4	Pump Station 2, Security, Communications, and SCADA systems power re-feed project	7/27/2010
DO072810-1	Pump Station 1, Electrification and Automation (E&A) Project	7/28/2010
DO081610-1	Pump Station 8, Temporary communications wiring	8/16/2010
DO081710-1	Pump Station 9 / DRB, Unfinished security projects	8/17/2010
DO081710-2	Pump Station 9 / DRB, Pump Module's walkways and stairs light upgrade project	8/17/2010
DO081710-3	Pump Station 9 DRB, Tank 190 Overfill Incident cleanup	8/17/2010
DO081710-4	Pump Station 10, Courtesy Inspection	8/17/2010
DO081710-5	Pump Station 11 / GRB, Security and Communications projects	8/17/2010
DO081810-1	Pump Station 12, Cathodic Protection system improvement and expansion project	8/18/2010
DO081810-2	VMT, Courtesy Inspection	8/18/2010
DO081810-3	Petro-Star Metering, Firewall between control room and process area	8/18/2010
DO081910-1	Sourdough Creek South bank, Security Systems Upgrades	8/19/2010
DO092710-1	Pump Station 8, NOV - violation of NEC Articles 110.3, 314.15, 314.17(A) and 800	9/27/2010
DO092810-1	Pump Station 9 / DRB, Pump Module's walkways and stairs light upgrade project	9/28/2010
DO092810-2	Pump Station 9 / DRB, Unfinished security projects	9/28/2010
DO092810-3	Pump Station 9 / DRB, Violation of NEC Articles 90, 100, and 110 corrected on the spot	9/28/2010
DO092910-1	Pump Station 5, PLQ Kitchen remodel project	9/29/2010
DO092910-2	Pump Station 5, Cathodic Protection systems upgrades	9/29/2010
DO092910-3	Pump Station 6 / YRB, Plans are to install new generators here	9/29/2010
DO092910-4	Pump Station 7, Courtesy Inspection	9/29/2010
DO110110-1	PS-8, Conditions that required an NOV to be issued on 9-27-2010 have been corrected	11/1/2010
DO110110-2	Pump Station 8, Courtesy Inspection	11/1/2010
DO110210-1	Pump Station 9 / DRB, Pump Module's walkways and stairs light upgrade project	11/2/2010
DO110210-2	Pump Station 9 / DRB, Courtesy Inspection	11/2/2010

**SPCO/DOLWD FY11 TAPS Electrical Inspection Reports**

<b>Inspection Report #</b>	<b>TAPS Location and Inspection Description</b>	<b>Inspection Date</b>
DO110210-3	Pump Station 11/GRB Security Systems Upgrades still progressing	11/2/2010
DO110310-1	Pump Station 12, Courtesy Inspection	11/3/2010
DO110310-2	VMT, Project Z533 Power Generation/Distribution Upgrades	11/3/2010
DO110310-3	VMT, Certificate Of Fitness (COF) and Electrical Administrator (EA) card check	11/3/2010
DO110410-1	Pump Station 10, Courtesy Inspection	11/4/2010
DO121710-1	Marsh Creek Shop Anchorage, AK, Black Start Generator for PS-3 Project F605	12/17/2010
DO121710-2	Marsh Creek Shop Anchorage, AK, Black Start Generator for PS-4 Project F605	12/17/2010
DO121710-3	Marsh Creek Shop Anchorage, AK, Certificate of Fitness (COF) card check	12/17/2010
DO021411-1	Pump Station 8, Pig retrieval project	2/14/2011
DO021511-1	Pump Station 9 / DRB, Post S.R. project, Tank 190 incident, and recent low flow conditions	2/15/2011
DO021511-2	Pump Station 9 / DRB, Upgrades for seismic issues	2/15/2011
DO021611-1	Pump Station 7, MLU #1 was brought on line during recent low flow conditions	2/16/2011
DO021711-1	Pump Station 6 / YRB, Yukon River Bridge Security Upgrade	2/17/2011
DO021711-2	Pump Station 5, Bypass is functioning properly around piping plugged with pig pieces	2/17/2011
DO030811-1	Pump Station 2, Power Re-route project	3/8/2011
DO030811-2	Pump Station 3, Remote Security and Gate Control	3/8/2011
DO030811-3	Pump Station 3, Black Start Generator	3/8/2011
DO030811-4	Pump Station 3, Fuel Gas Line Electric Heater	3/8/2011
DO030811-5	Pump Station 4, Black Start Generator	3/8/2011
DO030811-6	Pump Station 4, Fuel Gas Line Electric Heater	3/8/2011
DO030811-7	Pump Station 4, Certificate of Fitness (COF) card check	3/8/2011
DO030911-1	Pump Station 1, Control and Instrumentation of new By-pass	3/9/2011
DO030911-2	Pump Station 1, Upgrades to Metering	3/9/2011
DO030911-3	Pump Station 1, Electrification and Automation (E&A) Project	3/9/2011
DO030911-4	Pump Station 1, Certificate of Fitness (COF) card check	3/9/2011
DO041111-1	Pump Station 8, Courtesy Inspection	4/11/2011
DO041211-1	Pump Station 9 / DRB, Courtesy Inspection	4/12/2011
DO041211-2	Pump Station 9 / DRB, Security Upgrades	4/12/2011
DO041211-3	Pump Station 9 / DRB, Certificate of Fitness (COF) card check	4/12/2011
DO041211-4	Pump Station 10, Courtesy Inspection	4/12/2011
DO041211-5	Pump Station 11 / GRB, Remote Security and Gate Control	4/12/2011
DO041311-1	Pump Station 12, Courtesy Inspection	4/13/2011
DO041311-2	Bligh Reef, PWS Communications Upgrade project Z616	4/13/2011
DO041311-3	VMT, Courtesy Inspection	4/13/2011
DO042611-1	Pump Station 5, Courtesy Inspection	4/26/2011
DO042611-2	Pump Station 5, PS-5 Area Cathodic Protection systems	4/26/2011
DO042611-3	Pump Station 5, Certificate of Fitness (COF) card check	4/26/2011
DO042611-4	Mile 238 DRA Facility, Security and Communications systems	4/26/2011

**SPCO/DOLWD FY11 TAPS Electrical Inspection Reports**

<b>Inspection Report #</b>	<b>TAPS Location and Inspection Description</b>	<b>Inspection Date</b>
DO042711-1	PS-6 / YRB, two new 400KW generators still on hold	4/27/2011
DO042711-2	Pump Station 7, Courtesy Inspection	4/27/2011
DO051011-1	Pump Station 2, Courtesy Inspection	5/10/2011
DO051011-2	Pump Station 3, F688 Security and Communications battery back-up	5/10/2011
DO051011-3	Pump Station 3, F730 Fuel Gas Line Heater project	5/10/2011
DO051011-4	Pump Station 3, F605 Black Start Generator project	5/10/2011
DO051011-5	Pump Station 3, Certificate of Fitness (COF) card check	5/10/2011
DO051011-6	Pump Station 4, F605 Black Start Generator project	5/10/2011
DO051111-1	Pump Station 1, Courtesy Inspection	5/11/2011
DO051111-2	Pump Station 1, PLQ Rebuild Project	5/11/2011
DO051111-3	Station 1, E & A Project S120	5/11/2011
DO061311-1	Pump Station 8, Notice of Violation on Weather Station install	6/13/2011
DO061311-2	Pump Station 8, Security and Communications systems	6/14/2011
DO061411-1	Pump Station 9, Courtesy Inspection	6/14/2011
DO061411-2	Pump Station 9, Office and Shop Upgrade project	6/14/2011
DO061411-3	Pump Station 9, Security Upgrade project	6/14/2011
DO061411-4	Pump Station 10, Courtesy Inspection	6/14/2011
DO061411-5	Pump Station 11 / GRB, Remote Security and Gate Control	6/14/2011
DO061511-1	Pump Station 12, Courtesy Inspection	6/15/2011
DO061511-2	VMT, Courtesy Inspection	6/15/2011
DO062811-1	Pump Station 2, Courtesy Inspection	6/28/2011
DO062811-2	PS-3, F688 battery back-up, and F605 Black Start Generator	6/28/2011
DO062811-3	PS-4, F688 battery back-up, and F605 Black Start Generator	6/28/2011
DO062911-1	Pump Station 1, Courtesy Inspection	6/29/2011
DO062911-2	Pump Station 1, E & A Project S120	6/29/2011

**SPCO/SFMO FY11 Fire and Life Safety Inspection Reports (by pipeline)**

Pipeline System	Description	Inspection Date(s)	Letter Date
TAPS	Annual Inspections PS 7-5	6/7- 6/9/2011	6/25/2011
TAPS	Annual Inspections PS 8,9, 10 Fairbanks Area	6/13-6/15/2011	6/16/2011
TAPS	Annual Inspections VMT – GRB	5/23-5/26/2011	6/1/2011
Badami/ Northstar	Annual inspections Badami/ North star Pipelines	5/2-5/3/2011	5/20/2011
Milne Point Line	Annual Inspections Milne Point Pipeline	4/5-/4/6/2011	4/20/2011
TAPS	Annual Inspections Pump Stations 1-4	5/9-5/12/2011	5/25/2011
Alpine	Annual Inspections Alpine Pipeline	1/17-1/20/2011	2/15/2011
Kuparuk	Annual Inspections Kuparuk Extension Pipeline	1/17-1/20/2011	2/15/2011
Endicott Pipeline	Annual Facility Inspections	12/15-12/16/2011	1/10/2011
Kuparuk Pipeline	Kuparuk Pipeline, CFPI, CPF 2, KOC, KCS, KCC Pads	10/18-10/20/2011	11/5/2011
Nuiqsut Pipeline	Pipeline facilities	9/21-9/23/2011	10/20/2011
KKPL- Marathon	Beluga, KKPL junction, Terminus facility inspections.	9/7-9/8/2011	10/25/2011

**Appendix H: Authorizations, Rights-of-Way, and Permits Issued for SPCO Authorizations  
FY11: July 1, 2010 – June 30, 2011**

Permit / ADL Number	Date	Location	Description
TWUP P2010-4 (renewal of 2006-6)	7/1/2010	SW4SE4, Sec.31, T.4.N., R.1.W., and SW4, Sec. 9, T.3.N., R.1.W., CRM	TWUP was issued to withdraw up to 75,000 gpd of water from the north and south banks of the Tazlina River to support the Rivers and Flood Plains Project as well as general workpad and road maintenance activities.
LAS 27611	7/1/2010	Sec. 28, T.36.N., R.10.W., FM	LUP was issued for reestablishing a fish passage by constructing a let-down structure on a rock base filled with imported gravel to prevent French draining. This permit includes off-right-of-way authorization per Stipulation 2.9.1.
TWUP P2007-13 Amendment No. 1	07/09/2010	W2, Sec. 31, T.14.S., R.10.E., FM	A TWUP was issued to withdraw up to 35,000 gpd of water from a pond within Operations Material Site 41-1R, PLMP 586.6. The water will be used for dust abatement, soil compaction and ongoing spill response activities under Project F683 for crude oil recovery processes for the Tank 190 spill at the Delta Response Base.
ADL 230945	8/6/2010	NE4, S2NW4, T.8.S., R.2.W., CRM	Material Sale Contract executed for 25,000/cy of sandy gravel at OMS 7-1M.
TWUP P2010-6	8/10/10	SE4SE4, Sec. 34, T.7.S., R.8.E., FM	TWUP was issued to withdraw up to 35,000 gpd of water from ponds at Operation Material Site 49-3 near PLMP 520 to be used for operation and maintenance activities, compaction, hydrostatic testing, tank cleaning, spill response activities and cleanup.
LAS 27749	8/16/2010	NW4, Sec. 16, T.8.N., R.6.W., FM	LUP was issued for purpose of drilling approx. 20 soil sampling holes w/in & outside the TAPS row near PLMP392 to investigate slope stability in the vicinity of Lost Creek. These sample holes will provide subsurface information, map permafrost depth, and observe the extent of subsurface peat deposits for use in developing slope movement mitigation strategies. This permit includes off-right-of-way authorization per Stipulation 2.9.1.
TWUP P2010-7	8/20/2010	NE4SE4, Sec. 17, T.23.N., R.14.W., FM	TWUP was issued to withdraw up to 35,000 gpd of water from a seasonal pond at Pump Station 5 for pad maintenance and dust suppression.
LAS 27748	8/26/2010	NW4SE4, Sec. 36, T.9.S., R.5.W., CRM	LUP was issued for the purpose of adding galvanic anodes and monitoring coupons at the spring line of the buried TAPS pipeline near the Unnamed Creek crossing at PLMP 787.7. This will enhance the cathodic protection of the pipeline in this area. This permit includes off-right-of-way authorization per Stipulation 2.9.1.
ADL 63574 Amendment	8/26/2010	Sec. 9, T.8.S., R.2.W., CRM	Amendment was executed for cathodic protection system at TAPS Access Road 7 APL-2, PLMP 766.6, and Off R/W Authorization was granted under Stip. 2.9.1.
ADL 63574 Amendment	9/9/2010	Sec. 23, T.3.N., R.14.E., UM	Amendment was executed for construction and maintenance of a buried sill within the floodplain of the Sagavanirktok River, PLMP 47, and Off R/W Authorization was granted under Stip. 2.9.1.

**Appendix H: Authorizations, Rights-of-Way, and Permits Issued for SPCO Authorizations  
FY11: July 1, 2010 – June 30, 2011**

Permit / ADL Number	Date	Location	Description
LAS 27825	9/24/2010	Sec. 17, T.21.S., R.12.E., FM	LUP was issued to excavate the buried TAPS pipeline to investigate the integrity of the pipe, repair the pipeline if needed, and recoat the pipe, and backfill the excavation as part of APSC's Project F678-2010 Pipeline IJI Pig Investigations. This permit includes off-right-of-way authorization per Stipulation 2.9.1.
ADL 230928	9/28/2010	Sec's. 31,32,33, T.4.S., R.14W; Sec's. 34, 35, T.4.S., R.15W; Sec's. 1, 2, T.5.S.R.14W.; & Sec's. 2, 3, T.5.S.R.15W, SM	Right-of-Way Lease for the North Fork Pipeline was executed. The pipeline system is to be used only for the transportation of Natural Gas. The lease expires September 27, 2040.
LAS 27862	11/12/10	Sec's. 24 & 25, T.18.S., R.10.E., FM	LUP was issued to excavate around buried TAPS pipeline at PLMP 592.50 and 592.51 at Phelan Creek to investigate the integrity of the pipe, repair the pipeline if needed, and recoat the pipe, under APSC's Project No. F678. A gravel berm will be constructed around the work site using material from the riverbars for excluding or diverting surface flows and aufeis from the excavation work area. This permit includes off-right-of-way authorization per Stipulation 2.9.1.
ADL 63574	12/3/2010	TAPS Line Wide	Off right-of-way authorization along TAPS for winter travel by region.
LAS 27846	12/6/2010	Sec. 8, T.8.S., R.2.W., CRM	LUP was issued to stabilize a new low water crossing of Ptarmigan Creek on TAPS Access Road 7 APL/AMS-1A and enhance fish passage across the road bed. The new low water crossing was created when a new side channel of Ptarmigan Creek was formed by the severe rain and flooding that occurred in 2006. This permit includes off-right-of-way authorization per Stipulation 2.9.1.
LAS 27933	1/28/2011	T.4.S., R.14.W.; T.5.S., R.15.W., & T.5.S., R.14.W., SM	LUP was issued for the North Fork Pipeline, ADL230928. Primarily for storing frozen blocks of muskeg surface materials that are being segregated and retained for restoration of the site after placement of the pipeline.
LAS 27945	2/25/2011	Sec. 12, T.5.S., R.5.E, FM; Sec. 10, T.7.S., R.8.E., FM; Sec. 10, T.7.S., R.8.E., FM, Sec. 15, T.7.S., R.8.E., FM and Sec. 11, T.20.S., R.11.E., FM.	Excavating 5 sections of the buried pipe to investigate the integrity of the pipe, repair the pipe if needed, re-coat the pipe, and backfill the excavation as part of the APSC's Project X511-2011 Mainline Integrity Investigations. The 5 PLMPs are as follows: 495.13, 516.08, 516.38, 517.0 and 604.6.
TWUP P2011-1	4/1/2011	Sec. 14, T.11.S., R.11.E., UM	Appropriation of up to 30,000 gpd of water for dust abatement and airstrip maintenance at Galbraith Airstrip. The water use will occur between April 1, 2011 and November 30, 2015.
LAS 28028	05/06/11	Sec. 28, T9S, R4W, CRM	LUP issued to store stockpiled mineral material & non-hazardous materials and equipment at OMS 71-1HR.
LAS 28030	05/06/11	Sec's 7 & 8, T8N, R6W, FM	LUP issued to store stockpiled mineral material & non-hazardous materials and equipment at OMS 71-1HR.

**Appendix H: Authorizations, Rights-of-Way, and Permits Issued for SPCO Authorizations  
FY11: July 1, 2010 – June 30, 2011**

Permit / ADL Number	Date	Location	Description
LAS 28031	05/06/11	Sec 15, T10N, R8W, FM	LUP issued to store stockpiled mineral material & non-hazardous materials & equipment in OMS 74-2HR.
ADL 63574	6/6/2011	TAPS Line Wide	Off right-of-way authorization along TAPS for "List of Twelve" Operations and Maintenance Activities.

**Appendix I: Throughput for SPCO Jurisdictional Pipelines, 2010**

Alpine Diesel Pipeline	4,562,265 gallons
Alpine Oil Pipeline	32,953,717 barrels
Alpine Utility Pipeline	39,008,416 barrels
Badami Sales Oil	81,941 barrels
Badami Utility	57,530 Mscf
Endicott Oil	4,616,859 barrels
Kenai Kachemak Pipeline (Natural Gas)	14,209 MMcf
Kuparuk Pipeline	93,367,000
Kuparuk Pipeline Extension	59,830,456
Milne Point Pipeline (Oil)	9,761,125 barrels
Milne Point Product Pipeline (NGL)	Not in service
Nikiski Alaska	13,153,249 barrels
Northstar Oil	6,133,803 barrels
Northstar Gas	19,952,516 Mscf.
Nuiqsut Natural Gas Pipeline	90,875,000 cf
Oliktok Pipeline	6,337,985 barrels
Trans-Alaska Pipeline System (Oil)	226,174,050 barrels

**Appendix J: Lease Required Contact Information**

Pipeline	Lease Sec/Stip	Registered Agent	Lease Sec/Stip	Authorized Representative	Lease Sec/Stip	Field Representative
Alpine Pipelines	Sec. 30	Mr. William Sargent Engineering & Operations Manager Alpine Transportation Company P.O. Box 100360 ATO 908 Anchorage, AK 99510-0360	Sec. 30	Mr. William Sargent Engineering & Operations Manager Alpine Transportation Company P.O. Box 100360 ATO 908 Anchorage, AK 99510-0360	Sec. 30	David Todd / Larry Baker CPF-3 Operations Superintendent ConocoPhillips Alaska, Inc. P.O. Box 196105, NSK 22 Anchorage, AK 99519-6105
Badami Pipelines	Sec. 8(i)	CT Corporation, Re: BPTA Suite 202 9360 Glacier Highway Juneau, AK 99801	Sec. 26	Mr. Don Turner Vice President, BPTA, Inc. P.O. Box 190848 Anchorage, AK 99519-0848	Sec. 26	Bruce W. Robinson / T.J. Barnes Mail Stop END 900 E. Benson Blvd. Anchorage, AK 99508
Endicott	Sec. 4(j)	CT Corporation, Re: BPTA Suite 202 9360 Glacier Highway Juneau, AK 99801	Stip. 1.3.2	Mr. Don Turner Vice President, BPTA, Inc. P.O. Box 190848 Anchorage, AK 99519-0848	Stip. 1.3.2	Bruce W. Robinson / T.J. Barnes Mail Stop END 900 E. Benson Blvd. Anchorage, AK 99508
KKPL	Sec. 8(j)	Ms. Jaci Stasak Marathon Pipe Line, LLC P.O. Box 2399 Kenai, AK 99611	Sec. 30	Mr. Daniel Riemer, President Kenai Kachemak Pipeline, LLC 5555 San Felipe Road Houston, TX 77056	Sec. 30	Marathon Pipe Line, LLC Attn: Ms. Pamela J. Locke Kenai Area Manager P.O. Box 2399 Kenai, AK 99611
Kuparuk and Kuparuk Extension	Sec. 4(j)	Mr. William Sargent Engineering & Operations Manager Alpine Transportation Company P.O. Box 100360 ATO 908 Anchorage, AK 99510-0360	Stip. 1.3.2	Mr. William Sargent Engineering & Operations Manager Alpine Transportation Company P.O. Box 100360 ATO 908 Anchorage, AK 99510-0360	Stip. 1.3.2	David Todd / Larry Baker CPF-3 Operations Superintendent ConocoPhillips Alaska, Inc. P.O. Box 196105, NSK 22 Anchorage, AK 99519-6105
Milne Point Pipelines	Sec. 4(i)	CT Corporation, Re: BPTA Suite 202 9360 Glacier Highway Juneau, AK 99801	Stip. 1.3.2 Sec. 30	Mr. Don Turner Vice President, BPTA, Inc. P.O. Box 190848 Anchorage, AK 99519-0848	Stip. 1.3.2 Sec. 30	Jeff Michels / Kenton Schoch Mail Stop MPU 900 E. Benson Blvd. Anchorage, AK 99508

Pipeline	Lease Sec/Stip	Registered Agent	Lease Sec/Stip	Authorized Representative	Lease Sec/Stip	Field Representative
Nikiski Alaska Pipeline	Sec. 11	Tesororo Alaska Pipeline Co. Attn: Shawn Brown Manager Pipeline & Terminals P.O. Box 3369 Kenai, AK 99611	Stip. 1.4.2	Tesororo Alaska Pipeline Company Attn: Shawn Brown P.O. Box 3369 Kenai, AK 99611	Sec. 11	Tesororo Alaska Pipeline Co Attn: Shawn Brown Manager Pipelines & Terminals P.O. Box 3369 Kenai, AK 99611
Northstar Pipelines	Sec. 8(j)	CT Corporation Re: BPTA Suite 202 9360 Glacier Highway Juneau, AK 99801	Sec. 30	Mr. Don Turner Vice President, BPTA, Inc. P.O. Box 190848 Anchorage, AK 99519-0848	Sec. 30	Wayne Kuykendall / Gary Herring Mail Stop Northstar 900 E. Benson Blvd. Anchorage, AK 99508
North Fork	Sec. 30	Mr. Ed Kerr Armstrong Oil & Gas Inc. 1421 Blake Street Denver, CO 80202	Sec. 30	Mr. Ed Teng Vice President of Engineering 1421 Blake Street Denver, CO 80202	Sec. 30	Mr. Chuck Johnson Armstrong Operations Anchor Point, AK
Nuiqsut Natural Gas Pipeline	Sec. 8(j)	Mr. Kent Grinage, Director North Slope Borough Department of Public Works PO Box 350 Barrow, AK 99723	Sec. 30	Mayor Edward Itta North Slope Borough PO Box 69 Barrow, Alaska 99732	Sec. 30	Mr. Tom D. Nicolos Manager, Airports, Gas Fields, & Landfills North Slope Borough Department of Public Works PO Box 350 Barrow, Alaska 99723
Oliktok Pipeline	Sec. 4(j)	Mr. William Sargent Engineering & Operations Manager Alpine Transportation Company P.O. Box 100360 ATO 908 Anchorage, AK 99510-0360	Stip. 1.3.2	Mr. William Sargent Engineering & Operations Manager Alpine Transportation Company P.O. Box 100360 ATO 908 Anchorage, AK 99510-0360	Stip. 1.3.2	David Todd / Larry Baker CPF-3 Operations Superintendent ConocoPhillips Alaska, Inc. P.O. Box 196105, NSK 22 Anchorage, AK 99519-6105
TAPS	Sec. 12	Alyeska Pipeline Service Company Attn: Mr. Thomas J. Barrett, President P.O. Box 196660 Anchorage, AK 99519-6660	Stip. 1.5.3	Mr. Joseph Robertson Director of Regulatory Affairs, APSC P.O. Box 196660, MS 502 Anchorage, AK 99519-6660	N/A	N/A